

Developing Trash-Free Special Events

A Planning Guide for North Carolina Communities and Event Planners



Photo courtesy of the Eno River Association.

Produced by
The Eno River Association

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Preface

This document was funded by the North Carolina Department of Environment and Natural Resources, Division of Pollution Prevention and Environmental Assistance as part of a Solid Waste Reduction Assistance Grant project. The primary goals of the project, entitled "Developing Trash-Free Special Events" were

- 1) to evaluate, document and enhance the recycling program of the Festival for the Eno in Durham, NC; and
- 2) to develop a Planning Guide for organizing recycling programs at special events, using the Festival for the Eno and other events as case studies.

While not intended to be an exhaustive coverage of the mechanics of collection or recovery of recyclable materials at special events, this Guide should provide readers with a thorough understanding of the issues to be addressed during the planning stages of a special events recycling program, as well as a solid foundation for successfully implementing such a recycling program.

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Table of Contents

1. Introduction	5
✓ Reasons for recycling at special events	
✓ Recognizing the challenges to recycling at special events	
✓ How will this Planning Guide help?	
2. Getting Started	9
✓ Making a commitment to reduce your waste	
✓ Identifying and involving stakeholders	
✓ Establishing realistic goals	
3. Identifying Materials to Include in Your Recycling Program	12
✓ Typical wastes generated at special events	
✓ How to identify the flow of waste materials at your event	
✓ Finding outlets for recovered materials	
✓ Dealing with food waste	
✓ Other difficult materials	
✓ Choosing which materials to recycle at your event	
4. Community Involvement and Volunteers	20
✓ Tapping Into Community Resources	
✓ Finding, Training and Keeping Volunteers	
✓ Case Study--Recycling Volunteers at Festival for the Eno	
5. The Role of Vendors in Special Event Recycling	25
✓ Food vendors	
✓ Other vendors	
✓ Vendor communications and incentives	

6. Designing Effective Recycling Stations 30

- ✓ Placement of stations
- ✓ Container selection
- ✓ Clear instructions

7. Putting it All Together 35

- ✓ Sample timeline
- ✓ Evaluating the recycling program

8. Case Studies 39

- ✓ Festival for the Eno
- ✓ Common Ground Country Fair
- ✓ Whole Earth Festival
- ✓ 1999 Special Olympics World Summer Games

Appendices

Appendix A: Vendor materials from Festival for the Eno (contract, letter)

Appendix B: Triangle Region Special Events Survey and Focus Group Results

Appendix C: References

Appendix D: Articles from *Biocycle* and *Resource Recycling*

Section 1: Introduction

Reasons for recycling at special events

Recognizing the challenges to recycling at special events

How will this Planning Guide help?

Reasons for recycling at special events



Carrboro Day, 1999. Photo by Walt Unks, courtesy of the Herald-Sun.

Many of the people who attend special events are accustomed to recycling in their homes and workplaces. When they come to a special event, they'll probably be looking for a recycling bin for their empty plastic water bottles and soda cans. They might be disappointed and dissatisfied if all they can find is a trash can. Providing recycling options at special events will produce happier attendees.

Another reason for setting up recycling at special events is that these events can produce a lot of trash. Although there is virtually no quantitative information on the amount and type of waste generated by special events in North Carolina, it represents a potentially significant untapped source of recyclable and compostable materials for recovery. Recycling helps minimize the environmental impact of the special event on its host community.

Special events should be a place where the principles of recycling are reinforced. In fact, additional public awareness and education can be achieved through effective special events recycling programs. Other indirect benefits of recycling include the following:

- Special events provide an opportunity to try innovative approaches to recycling and educating.

- Recycling at special events can pull community groups together through volunteer activity.
- Recycling provides a unique avenue to advertise an event.

Recognizing the challenges to recycling at special events

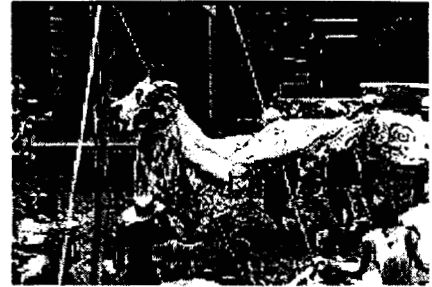
In spite of all the good reasons to recycle at special events, there are some obvious challenges involved in setting up an effective recycling program for such an event. The most significant barrier to overcome in establishing a special event recycling program is the already overloaded list of responsibilities for the event organizers. Event organizers are concerned with many issues, running the gamut from publicity to sanitation. Dealing with recycling adds yet another layer of complexity to the planning details.

The following obstacles to recycling at special events were identified by participants of a focus group conducted as part of the research for this Guide:

- It may be difficult to recruit the large number of volunteers typically required for a successful recycling program.
- Initial planning and organizing of a special events recycling program is time consuming.
- Few models of successful special events recycling programs exist.
- Monitoring of recycling container sites is usually required in order to keep the materials separate.
- There is seldom a financial incentive to recycle at special events.
- Space and suitable sites for placing recycling containers are often limited.
- Initial startup costs (e.g., to purchase containers and signs) are often prohibitive.
- Local outlets for the recovered material, especially food waste and certain types of plastic, may not be available.

How will this Planning Guide help?

This Guide will help special event organizers overcome some of the obstacles to recycling identified in the last section. If you are an organizer of a special event, this Guide will help you by providing models of effective recycling programs and giving suggestions on such topics as identifying what materials to recycle, dealing with vendors, recruiting volunteers, and finding space for recycling containers.



Eno River Festival. Photo courtesy of the Eno River Association.

The main focus of this Planning Guide is recycling at festivals, although most of the planning issues apply to the broader spectrum of special events. The Appendix provides additional reference materials addressing recycling at events other than festivals.

This Planning Guide is based largely on observing and analyzing recycling at the 1999 Festival for the Eno in Durham before, during, and after the event. Because of its track record in recycling over the last several years, the Festival for the Eno represents an excellent case study in special event recycling. Descriptions of recycling programs from events in other regions are provided in Section 8 of the Planning Guide to illustrate unique approaches to recycling.

The Planning Guide also incorporates the experience of special events coordinators from numerous other festivals in the Triangle region of North Carolina. In the six-county region served by the Triangle J Council of Governments, 32 major annual special events—in addition to the Festival for the Eno—were identified in preparing this Guide. These events have an estimated total attendance of 612,000 people. For each event, a contact person was sent a questionnaire regarding the management of waste at his or her special event. In addition, a focus group was convened to discuss issues regarding waste management at the events. Obstacles, questions, and issues identified in the focus group and survey were considered in the preparation of the Planning Guide. A list of Triangle special events and a summary of the survey and focus group results can be found in Appendix B.

This Guide also provides you with assistance in establishing a timetable for setting up recycling. An example timeline for planning recycling at special events, from a University of Northern Iowa document entitled "*Recycling for Festivals and Special Events*," is provided in Section 7.

There is no single approach to special event recycling that can be universally applied. Your community is unique, and your event is unique. This Guide is intended to provide you with a variety of approaches that can be tailored to the needs of your community and your event.

Section 2: Getting Started

Making a commitment to reduce your waste

Identifying and involving stakeholders

Establishing realistic goals

Making a commitment to reduce your waste

As discussed in Section 1, there are many good reasons for recycling at special events, but there are also some tough challenges associated with establishing a new program. These challenges should be acknowledged, and a firm commitment should be made by the organization sponsoring the event in order to see the process through the challenges. This commitment should be conveyed and shared by other participants in the planning process as well as event stakeholders. Ideally, one or more individuals will stand out as a champion of the recycling effort. The role of a recycling champion is to see that the principles of recycling get incorporated into every aspect of the event planning process.

Identifying and involving stakeholders

There are many different stakeholders associated with recycling at special events, each with his/her/its own issues and perspectives. Examples of stakeholders include the following:

- the organization or group holding the event;
- the event planner (if separate from the organization holding the event);
- the community at large in which the event is held;
- the facility at which the event is held;
- the people who attend the event;
- vendors at the event;
- event sponsors.

The interests of a stakeholder may be at odds with the organizer, and vice versa. Often, the people who create the most waste are the furthest removed from the responsibility for waste management. This puts the burden on the event organizer to make sure that the recycling program is incorporated into all levels of the event's infrastructure. The most effective approach is to bring these stakeholders to the table early on, encouraging their input in the planning process. This type of "ownership" is a constructive way to build a sustainable recycling program using a team-oriented approach.



Eno River Festival. Photo courtesy of the Eno River Association.

Establishing realistic goals

Once the commitment has been made, challenges acknowledged and stakeholders identified, it is important to establish realistic goals. Section 1 listed some of the reasons and benefits for recycling at special events. In considering your program, you should prioritize the reasons that led to your commitment to recycle. For example, you may assign the highest value to educating the public about recycling. This assignment of value will then influence the role of education in each aspect of the planning process. All your flyers, for instance, may stress the recyclability of most event trash. If your organization desires to convey a strong sense of environmental responsibility, then the approach to designing the recycling program may be different. For example, all your flyers may stress the connection between wise use of resources and preservation of the event site.

Consider the following when setting goals for your recycling program:

- Know why you are pursuing the recycling effort. (There may be several reasons—prioritize them!)
- Make your goals realistic.
- Set your goals for the first year and beyond.

- Make your goals measurable. (Examples: amount of waste diverted, number of recycling stations established, number of materials recycled, number of attendees at educational programs.)
- Incorporate opportunities to evaluate and modify your goals based on program successes/failures.

You may envision an event that is completely trash-free, but that is not realistic for your first year. Therefore, you may wish to establish goals in increments, allowing time for your program to evolve. Your first year could be devoted to collecting recyclable materials for which you know you have secure outlets—aluminum and recyclable plastic beverage containers, for example. This allows the opportunity to experiment with container siting, collection schedules, volunteer management, and public acceptance. Many great ideas can grow after the initial year of a recycling program. Build in the flexibility to change, try new approaches, and invite others to offer their energy to the program.

Section 3: Identifying Target Materials

Typical wastes generated at special events

How to identify the flow of waste materials at your event

Finding outlets for recovered materials

Dealing with food waste

Other difficult materials

Choosing which materials to recycle at your event

Typical wastes generated at special events

Events that are open to the public can be expected to receive a wide range of materials in the waste stream. To a large degree, the waste stream will reflect materials that are distributed by vendors. For example, food waste (including paper food service items) represents 51% by weight of the waste stream of the Festival for the Eno. See the table in Section 8: Case Studies, for a complete breakdown by material type at the Festival for the Eno.

A survey of event planners in the Triangle region of North Carolina included a question about the type of materials encountered in the waste stream of their events. The most prevalent materials listed by survey respondents were the following:

- cups (Styrofoam, coated paper);
- napkins;
- plates;
- drink containers (plastic, aluminum);
- paper flyers;
- food wrappers;
- food waste;
- plastic utensils;
- cardboard packaging;

- plastic wrap.

Note that most of the materials in the above list are generated as a result of food vending. Programs and activities offered at an event also influence the waste stream. For example, participatory children's activities often involve craft supplies, some of which end up in the waste stream. An example from the Festival for the Eno is unused clay from children's art projects. This material is usually donated to a local arts education program. Working with vendors and activity managers prior to the event regarding the materials they plan to use will assist in predicting the waste stream and in planning for recycling opportunities.



Apex Peak Week. Photo by David Leone, courtesy of The Apex Herald.

The recycling and waste management program must be prepared to accommodate materials inevitably brought in from the outside by the public. Some examples of these are fast-food scraps and wrappers, diapers, and other items that are not distributed by on-site vendors. Instructions for the recycling program should address these extraneous materials, most of which may not be recyclable or easily incorporated into a composting program.

How to identify the flow of waste materials at your event

The waste to be expected at your event is directly influenced by several factors, including the following:

- presence or absence of food vendors;
- type and number of non-food vendors;
- level of control over crowd entry.

Presence or absence of food vendors - As noted above, food service items and food scraps constitute the majority of waste materials generated at most events where food is served.

Therefore, you can determine to a large degree what is going to be in your waste stream by considering your food vendors. What type of food is being served? In what types of containers? What utensils are distributed with the food items? What additional condiments are provided by the vendor and in what type of packaging? The recycling planning process should include dialogue with your food vendors with respect to these questions. You can exert some control over these issues to the extent that you are willing or able to direct vendor activities. The topic of vendor relations is discussed in more detail in Section 5: The Role of Vendors in Special Event Recycling.

Type and number of non-food vendors – The type and number of non-food vendors varies considerably by event. An arts and crafts fair such as Centerfest in Durham or Artsposure in Raleigh, for example, may generate fewer types of waste than a more interactive festival like the Festival for the Eno. The recycling planning process should include input from non-food vendors as well as food vendors in order to determine what type of wastes to expect. Again, you can exert control over these vendors with respect to the type of waste materials that they generate.

Level of control over crowd entry – The ability to control access to your event has a huge impact on the amount and type of waste materials you will encounter. Apple Chill is a free, community event in downtown Chapel Hill that has no designated point of entry or exit. Participants come and go as they please, bringing in a variety of food, drink and miscellaneous items that have the potential to end up in the festival's waste or recycling containers. This kind of event is perhaps the most difficult to manage for recycling. At the Festival for the Eno and other events that charge admission and have a designated point of entry, there is at least some degree of control that can be exerted over what comes into the property. A designated entrance also provides an excellent opportunity to place signs or distribute instructional materials regarding the recycling program at the event. An additional benefit of controlled entry is the opportunity to



Apex Peak Week. Photo by David Leone, courtesy of The Apex Herald.

quantify the number of people attending the event for planning purposes. Not knowing the attendance at an event also makes it very difficult to evaluate program effectiveness from year to year.

Finding outlets for recovered materials

What will happen with all the materials you recover from your event? This is a question that must be considered early in the process. Coordinating with your community's recycling program will help determine which materials you can collect at your event without having to worry about finding an outlet for them.

If you are an event planner, contact your local solid waste management, public works, or environmental resources department and ask to speak to a recycling coordinator or solid waste manager. The recycling coordinator should be able to provide valuable information in planning your program. If you cannot find a recycling coordinator or if there is no recycling program in your community, contact the North Carolina Department of Environment and Natural Resources, Division of Pollution Prevention and Environmental Assistance (NCDENR-DPPEA) at 800-763-0136 (website www.p2pays.org) and ask for contacts in your area that can help you find markets for recyclable materials from your event. The staff at DPPEA may also be able to provide additional planning assistance with your recycling program.

Even if you are already familiar with existing recycling services in your community, there are still connections that need to be made. After all, special events are not necessarily included in a community recycling program due to their transient nature. Therefore, some creative thinking may be in order to find outlets for your recovered materials. The most common materials in community recycling programs are beverage containers (aluminum, plastic soda bottles, plastic milk jugs, glass), newspapers, corrugated cardboard containers, and high-grade office paper. Therefore, outlets for these materials should be easy to arrange. With these materials, the major task at hand is to recover them in a way that keeps them relatively clean.

Materials encountered frequently at special events for which outlets are not always readily available include mixed paper, plastic wrap, polystyrene, food waste, and most plastics other than soda bottles and milk jugs. Every community is unique; therefore, it is important to contact local recycling professionals to determine what commodities are and are not marketable.

Dealing with food waste

People go to fairs and festivals to have a good time, hear music, and eat good food. Sometimes food is an excuse all by itself to have a special event! Up to half of the waste generated from most special events is food waste—sometimes more. At the Festival for the Eno, food waste and paper food-service materials represent over half of the entire waste generated by weight. The opportunities for recycling food waste, however, are extremely limited in North Carolina at this time due to a lack of facilities that accept it for composting. At the end of 1999, there were only 2 composting facilities in North Carolina that were permitted to receive food waste. With the advancement of the composting industry, it is likely that food waste composting will become more commonplace. Until that time, there are still ways to reduce the amount of food waste generated at special events.



Apex Peak Week. Photo by David Leone, courtesy of The Apex Herald.

The most efficient approach is to reduce the amount of food waste generated in the first place by working with vendors before the event. If possible, you should provide vendors with estimates of the number of people expected to attend the event—return vendors are usually better informed about how much they will need. Vendor relations and incentives for reducing vendor waste are discussed in more detail in Section 5.

Another option for dealing with food waste is to identify organizations in the community whose function is to recover and distribute surplus edible food. Look under the category “food banks” in

the Yellow Pages. Also see the fact sheet on Licensed Garbage Feeders available from DPPEA's website (www.p2pays.org). It is best to communicate with these food distribution organizations prior to the event to see what their needs and requirements are for handling the surplus food. One approach is to invite the organization to have a booth at your event, allowing them to publicize their services and to be on hand for material recovery after the event. Example: A Durham-based service organization that had a booth at the Festival for the Eno picked up a large number of surplus loaves of bread following the Festival, then distributed them to needy individuals.



*1999 Eno River Festival.
Photo by Cindy Salter.*

In some areas, surplus food or food waste is a desirable source of animal food (usually for swine). There are restrictions on this type of activity, since only licensed animal feed operators are allowed to collect food waste for this purpose. This activity is regulated by the U.S. Department of Agriculture. A list of North Carolina licensed garbage feeders can be obtained by contacting Zyphilia Leach of the USDA at (919) 856-4170. Parties interested in donating food scraps may contact their local county government or cooperative extension agent for more information.

Even with efforts to reduce the amount of food waste and to recover some surplus food, there may still be a significant quantity of mixed food waste to deal with. If the community has access to a composting facility that accepts food waste, then the challenge is to collect the food waste separate from non-compostable materials and get the materials to the facility. As noted earlier, this is not an option for most North Carolina communities. To determine if there is a composting facility in your area that accepts food waste, contact the NC Department of Environment and Natural Resources, Division of Solid Waste, at 919-733-0692.

Last but not least is the option of composting the food waste from the event at the site of the event itself. This option is obviously limited to unique situations where the resources exist to manage such an endeavor. Food waste generated from the Festival for the Eno has been composted on location for several years. The following is a summary of the initial steps to determine if composting the food waste from your event on location is a viable option:

- Obtain Solid Waste Composting Rules (NCAC T15A:13B.1400) from Division of Solid Waste Management (phone number 919-633-0692). These regulations are also accessible from the Composting and Land Application Branch website (<http://wastenot.ehnr.state.nc.us/SWHOME/14RUL.htm>).
- Identify possible composting sites based on composting rules.
- Estimate volume and type of materials to be composted.
- Develop a tentative plan for recovering food waste and transporting it to the site.
- Draft a site plan and operations plan for the composting operation.
- Determine availability of labor and other resource requirements to build and maintain the compost pile.
- Identify beneficial uses of the finished product.
- If your findings are favorable for on-site composting based on the above steps, you should contact the Department of Environment, Health & Natural Resources, Division of Solid Waste Management, Composting and Land Applications Branch (919-733-0692) to discuss the viability of your plan.

Other difficult materials

By volume, the majority of materials that you can expect to encounter from your event have been covered in the above paragraphs. There are other materials, however, that can be a thorn in your side if you are not prepared to deal with them. Things like bottle caps, mixed media crafts materials, and glued or stapled items pose a threat to the absolute success of your program.

These items, when deposited into containers of recyclable materials, have the potential to cause the whole batch to be unacceptable to some markets. You should be able to predict these items, based on what is being distributed at the event. For example, if there are drink vendors selling plastic bottles of water, then you can expect lots of bottle caps. Where do they go? Can they be left on the bottle? Typically, no. Should they go in the garbage? Typically, yes. But you must address this situation in some way. See Section 6: Developing Effective Recycling Stations, for more information on this issue. The message here is to be aware of the many “extra” materials that might not come to mind right away but will haunt you in the long run if you do not prepare for their occurrence.

Choosing which materials to recycle at your event

Once you have a good idea of what materials to expect in your waste stream, you must decide which among them to include in your recycling program. The following considerations should be applied to each material in making this decision:

- the relative amount of the material expected to be present in your waste stream;
- the relative ease of collection and space required for the material;
- the availability of local markets for the material;
- the amount of instruction or education required to include the material in the program.

With these criteria applied to the evaluation process, you should be able to arrive at a decision that balances cost and benefit. The materials you select initially may change over time. In fact, in the recycling business it is a good idea to re-evaluate your options on a regular basis due to fluctuations in material supply and demand, which affect market value and even availability of local markets for your materials. In short, it is wise to design flexibility into your program.

Section 4: Community Involvement and Volunteers

Tapping into community resources

Finding, training, and keeping volunteers

Case study – Recycling volunteers at Festival for the Eno

Tapping into community resources

The level of recycling activity and awareness within a community will have some impact on the organization and acceptance of recycling at special events. Early in the planning phase of special event recycling, every effort should be made to include people from the community who are familiar with local recycling programs, services, and related activities. Even if your community does not have a comprehensive recycling program in place, there are groups or organizations supportive of recycling that can be instrumental in carrying that message forward through your special event recycling program.

Community involvement can be provided by public or private sector individuals, or by organizations involved in recycling or similar environmental pursuits. Enlisting the support and involvement of your community early in the planning process for recycling at your special event can save time and resources. Potential benefits that can be provided by community involvement include the following:

- source of volunteers;
- advertising or promotion for the recycling program;



*Common Ground
County Fair, Maine.
Photo by Cindy Salter.*

- source of funds, materials, or in-kind services to support the recycling program;
- expertise in organizational and operational aspects of the recycling program.

Finding, training, and keeping volunteers

Volunteers are the backbone of a successful recycling program at special events, and finding enough volunteers is always a challenge. If possible, volunteers with some knowledge or expertise in recycling should be recruited early in the planning process. For example, you might try the local Sierra Club or high school environmental clubs. Once you recruit volunteers, managing them effectively is extremely important. Volunteers with recycling knowledge and leadership skills are instrumental in organizing and overseeing other volunteers. Sources of other volunteers include scout organizations, school clubs, churches, civic organizations and local environmental groups. With an organized process, the general public can also be recruited. Offering incentives to volunteers, such as free admission or T-shirts, can help in the recruitment process.

It is essential to have a good estimate of the number of volunteers needed, as well as the specific tasks for which they are needed. The following is a general list of volunteer tasks, taken from Recycling Advocates' *Recycling at Your Event*:

- making signs;
- working with vendors before the event;
- monitoring recycling stations;
- sorting bins for contamination;
- distributing recycling information at the entrance of the event;
- transferring recyclables from bins to collection points;
- obtaining sponsors and/or donations;
- maintaining personal contact with vendors and exhibitors at the event.

To be most effective, it is important to have volunteer tasks well defined and quantified to the extent possible prior to beginning the volunteer recruitment process. Some volunteers are better leaders than others, so it is beneficial to match the individual with the task at hand wherever possible. By identifying the tasks and available time slots beforehand, the potential volunteers will have some prior knowledge of their responsibility and some choice as to the type of activities that they will perform.

One of the best ways to keep volunteers is to make sure as many staff people as possible say "thank you" and mean it. Expressing appreciation for volunteer work is often overlooked in the hustle and bustle of handling a special event.



*1999 Eno River Festival.
Photo by Cindy Salter.*

Case study: recycling volunteers at the Festival for the Eno

At Durham's Festival for the Eno, the success of the recycling program relies heavily on a group of dedicated volunteers. To accommodate recycling at this event, with an attendance of approximately 40,000 over a three-day period, at least 150 volunteers donate their time to the recycling & composting efforts. A substantial number of these volunteers return year after year. Volunteers help set up the recycling stations, make signs, answer questions, monitor recycling stations, service the collection routes, build the compost pile, and even recruit and train other volunteers. There is a core group of a few volunteers that have been involved for many years. These individuals have made improvements in the program through the years based on their observations and records.

Incentives for volunteers, other than intrinsic values such as contributing to a good cause, include free admission or a free Festival T-shirt. Some of the volunteers work a single 3-hour shift, while others spend 12-hour days during the entire three days of the Festival. This indicates the level of dedication and passion for the success of the program on the part of the managing

volunteers. The following represents the ideal volunteer staffing scenario for the recycling program during the Festival for the Eno (additional volunteers are needed for setup and tear-down):

- recycling coordinators - 2/day (usually the same 2 cover all 3 days);
- table attendants at Recycling Central – 3/day;
- recycling station monitors – 33/day;
- collectors – 18/day;
- vendor liaison – 1-2/day (varies);
- floaters – (varies);
- compost manager – 1/day;
- compost volunteers – 6/day.

The above is an *ideal* scenario, and not all of the volunteer slots are always filled. Further, there are always no-shows that have to be accounted for. Therefore, it is necessary to continue to recruit volunteers throughout the event to cover the weakest areas.

The Festival for the Eno sets up 20 recycling stations. Overall, the recycling effort at the Festival for the Eno usually manages with about 150 volunteers.

A unique approach began in 1997 that involves the concept of “adopting” a recycling station by a participating organization sharing some of the philosophies of the Festival for the Eno. For two consecutive years, the Carolina Recycling Association (CRA) participated in the Festival’s recycling program by “adopting” a recycling station. Staff from the CRA recruited approximately 20 of its members to cover volunteer needs at one of the full recycling stations. The CRA set up a table with its own organizational display adjacent to the recycling booth. The concept of recycling station adoption or sponsorship offers a way to help meet the volunteer and educational needs of the recycling program while providing a hands-on approach for an organization to deliver its own environmental message directly to the public.

Section 5: The Role of Vendors in Special Event Recycling

Food vendors

Other vendors and exhibitors

Vendor communication and incentives

Food vendors

Food vendors are perhaps the most important players in special events recycling since in most cases they represent the largest source of waste and recyclable materials generated at special events. Food vendors for special events usually bring everything they need to prepare and serve their particular food offerings.



*Common Ground County Fair, Maine.
Photo by Cindy Salter.*

The most typical items are food, condiments, cups, plates, bowls, utensils, napkins, plastic shrink-wrap, and cardboard. Any or all of these items can be expected to find their way into waste or recycling receptacles at your event. It is important to develop guidelines for controlling the flow of waste materials resulting from food vending and to communicate these guidelines to food vendors well in advance of your event. It would be especially useful in the early planning stages of a new recycling program to invite previous and potential food vendors to participate in the planning process to gain their unique insight into material usage and handling. (See Identifying and Involving Stakeholders in Section 2: Getting Started.)

With advance planning and guidance from event coordinators, food vendors can facilitate special event recycling in several ways:

- by minimizing waste through planning and procurement choices;

- by selecting materials consistent with the event recycling program;
- by notifying/educating customers of recycling options;
- by complying with the event recycling/disposal program.

Minimizing waste through planning and procurement choices – The most effective way to reduce waste is through careful planning and procurement choices. As an event planner or recycling program manager, you can help food vendors reduce waste generated at your event in a number of ways. In order to be effective in this endeavor, however, you must be familiar with the vendors and the particular products they offer. Following are some general tips for minimizing waste in food vending:

- Wherever possible, provide service items (condiments, straws, utensils, napkins) in bulk dispensers rather than individually wrapped packages.
- In selection of food vendors, seek or encourage foods requiring minimal or no packaging, e.g., “finger foods”, ice cream cones, tortilla wraps, corn-on-the-cob, etc.
- Provide historical attendance information to food vendors to help them order the right amount of food and materials.
- Require food vendors to remove all of their own waste, thus providing incentive to keep it to a minimum through advance planning.

Selecting materials consistent with the event recycling program - At events with successful recycling programs, it is not uncommon for event organizers to dictate the types of packaging or food service items used in food vending. Once you have determined what

materials to include in your recycling program (see Section 3 for more information on this), food vendors should be required to use only compatible materials. In some cases this will require vendors to make changes in their normal practices, some of which may cost them more. Since there may be some initial resistance to this approach, it is important to provide ample notice and assistance to the vendors in making appropriate procurement choices. An alternative approach is



*Common Ground County Fair, Maine.
Photo by Cindy Salter.*

for the event organizer to purchase all of the necessary food service items to ensure compatibility with the recycling program, and to have the vendors reimburse the event organizer for the amount they need.

Notifying/educating customers of recycling options – It is important to get your vendors to be supportive of the recycling program. Chances are, most of them will become enthusiastic about the program once they get accustomed to the changes. They should be encouraged to promote their own participation in the recycling program by, for example, posting a sign at their booth to indicate their support and involvement. You should work with your vendors in advance of the event to make sure that they understand the recycling program well enough to instruct their customers what and where to recycle their food service items. Some vendors will do this eagerly, while some may be apathetic. You can help in this endeavor by persistent communication with your vendors before, during and after the event. Providing simple, clear, and repetitive signage or instructions to the vendors will also help them convey the recycling message to their customers.

Complying with the event recycling/disposal program – By the time your event gets underway, your food vendors should be fully aware of what materials are and are not accepted in your recycling program, and they should know the location of your recycling stations. Any materials the vendors produce *inside* their booths must be handled according to your specifications. This will be highly dependent on your recycling program and their specific product. For example, a drink booth may pour the beverage from a glass, aluminum, or plastic container into a cup with ice to serve to the customer. This booth will therefore generate a large quantity of recyclable beverage containers. You may elect to provide special containers for vendors in this situation. At the Festival for the Eno, each drink booth is provided its own recycling bin for beverage containers. These bins are emptied routinely by recycling crews. Other food vendors are not provided with special containers for recycling but instead are expected to use the same recycling stations set up for the public. Once again, there are some vendors that will comply enthusiastically while other will resist. Communication is your best strategy to encourage their participation. Listen to the food vendors' comments during and after your event to discover better ways to design the program to encourage their involvement.

Other vendors

While food vendors represent the biggest challenge and the largest potential waste stream, other types of vendors and exhibitors can also contribute to the flow of waste and recyclables at special events, depending on the nature of their activity. The same principles that apply to food vendors should apply to other vendors; i.e., evaluate the items and materials that are used in the event that have the potential to end up in the trash. Work with these vendors or exhibitors prior to the event to help them make procurement choices and to otherwise plan for the disposition of their waste materials. Make sure they understand the recycling program well enough to provide direction to the public. Solicit feedback during and after the event, and monitor their compliance with the program. Each time you hold an event, you will learn more about your vendors and will discover new ways to work with them effectively.



*Apex Peak Week.
Photo by David Leone, courtesy of The Apex Herald.*

Vendor communications and incentives

Not all vendors will be accustomed to recycling. Consequently, they should be informed of any planned recycling activities well in advance of the event, especially first-time vendors. Explain to them why you are recycling, what items are being targeted, and ask for their cooperation. Include them in the planning process wherever possible and appropriate. They may have an interest and be willing to contribute some good ideas.

Work with the vendors beforehand by conducting a survey or waste audit, or requiring they submit a list of materials before they are accepted. Have them sign a contract that they will use those materials and participate in the program and/or remove all waste materials from the premises. Before the event gets underway, each vendor should receive clearly written

instructions about items that can be recycled, how to separate those items and where to store or deposit them.

One way to encourage vendor compliance may be to discount their booth rental cost the following year if they meet certain agreed-upon waste reduction goals.

During the event, there should be a designated person to work with vendors and troubleshoot any problems or issues that arise. This can be either a volunteer or a staff person, but should be someone who is confident and assertive in his or her task. Because some vendors may be resistant at first, it is very important to have effective communications. When the event is over, poll the vendors for comments and suggestions and thank them for their participation.

Examples of documents used with vendors at the Festival for the Eno can be found in Appendix A, including an application, instructions, award recognition letter, and a sample contract.

Section 6: Developing Effective Recycling Stations

Placement of Stations

Container selection

Clear instructions

Placement of stations

The placement and appearance of recycling stations are critical to maximum recycling participation at special events. Participants need to know where and how to recycling without having to expend a lot of effort. The avid recycler will always seek out recycling opportunities, but the general public needs clear direction.

An obvious consideration in siting recycling stations is easy access for both the recycling public and the crew(s) that collect the materials throughout the event. Convenient and easy to service recycling stations encourage high participation by attendees and more efficient material recovery by recycling crews.

There is a fine balance between too many recycling stations and not enough. The goal is to provide reasonable access to recycling without going overboard. The logistics and economics of collection at special events are similar to any other recycling program; i.e., the more stops that are required to service the recycling stations, the more resources required. It may take a few attempts to get the siting just right. Observation is the key to evaluating participation.

Recycling stations are most effective when placed near a stage or main attraction, restrooms, food vendors, entrances, exits, and other well traveled areas. Don't forget to put boxes at exits to collect programs for reuse at the entrances. The "low-profile" approach of Common Ground Country Fair notwithstanding, visibility is critical for locating recycling stations at an event. A flag on a tall pole could guide people to the station. Whatever the layout of recycling stations,

the public should be informed as to their location at every reasonable opportunity. An example of this is to clearly mark recycling stations on a map of the event grounds, usually provided with a program. Another example is to post recycling instructions and directions to the stations at the vendor booths. Yet another idea is to post information about recycling for folks to read while in line at restrooms.

Container selection

There are several issues to consider when selecting recycling containers.

Trash versus recycling containers

Container sizing

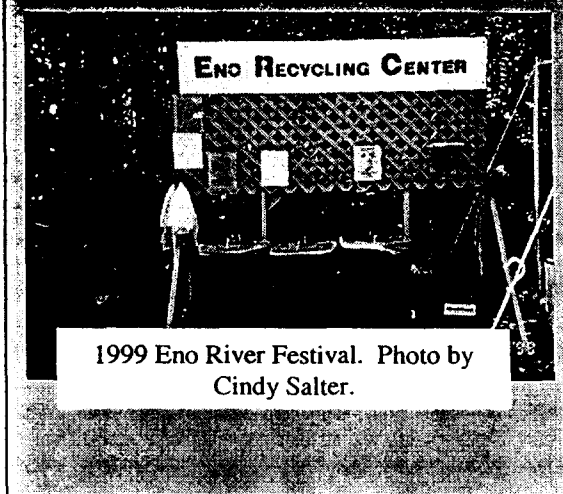
Aesthetics

Trash versus recycling containers -There is general agreement that wherever there is a trash container, there should be a recycling container. This will reduce contamination and increase the volume of recyclables collected.

There are some, however, who would question whether there should be trash containers at all. Most event organizers acknowledge that there's no practical way around it—you have to provide trash containers no matter how comprehensive the recycling program is. The Common Ground Country Fair in Maine, however, takes a different approach. Every one of its 178 recycling stations includes only two containers—one for compostable materials and one for non-compostable materials. The majority of non-compostable

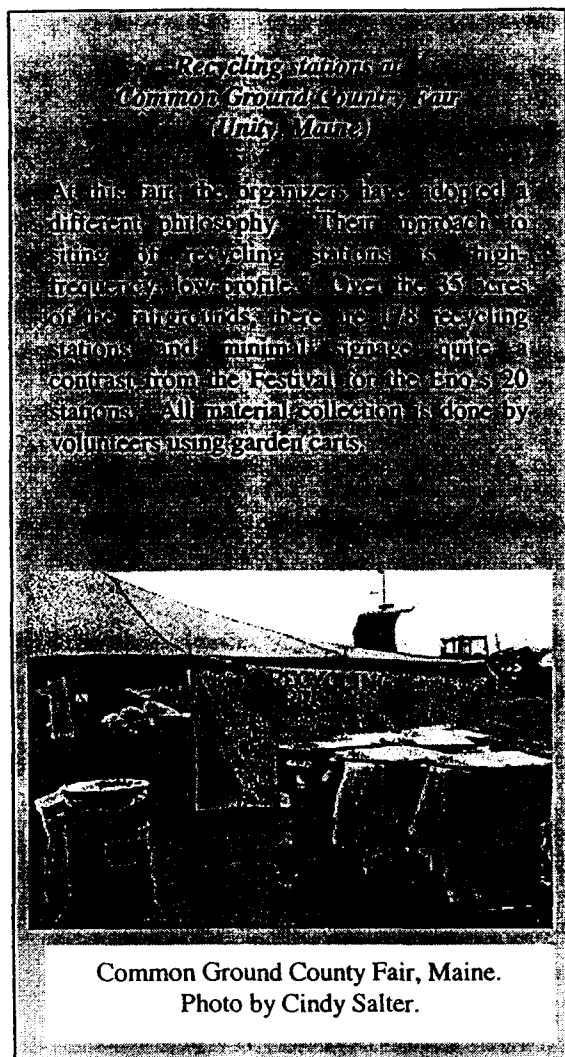
Recycling stations at Festival for the Eno (Durham, North Carolina)

The Festival for the Eno has 11 full recycling stations and 9 mini-stations, all of which collect the same materials, including non-recyclables (trash). The full stations target the general public and the mini-stations target specific generators, such as the performer. Most of the mini-stations are located behind performance stages. Siting of the stations has evolved over several years and is based on materials generation, crowd flow, visibility, and accessibility for material collection. The intent is that anywhere in the 15-acre Festival grounds, a recycling station is within view and reasonable walking distance. There is a double recycling station located in the center of the food court due to the high volume of materials generated in that vicinity. At least half of the recycling stations are located near a road within the festival grounds to allow vehicle-based material recovery. The others require some foot travel, which slows the pace of material recovery.



1999 Eno River Festival. Photo by
Cindy Salter.

materials are recyclable. There are no trash containers. Volunteers inspect 100% of the material



going into any of the containers. The volunteers remove contaminants from the compostables and separate the recyclables from the remaining materials.

The Festival for the Eno has 11 full recycling stations and 9 mini-stations. Each station has 4 containers, one of which is labeled "trash". The others are for recyclables and compostables. Trash includes diapers, miscellaneous plastic, bottle caps, and any number of other materials that are not recyclable or compostable. Invariably, trash gets in the recycling containers and vice-versa, but for the most part trash is trash.

These two examples represent vastly different approaches, yet each program achieves close to 90% waste diversion.

Container Sizing – Once the recycling program has been designed, i.e., once the materials for recovery have been selected, then the sizing of the containers for each material should be fairly straightforward. The objective is to select containers that will hold the greatest volume of each material, giving consideration to the weight of the material and the amount expected to be generated at the event. Simply stated, the lighter the material, the larger the container can be used without causing problems for the material recovery crews. At the Festival for the Eno, the largest container is a 33-gallon plastic container that is used for polystyrene (mostly drink cups). A large volume of polystyrene is generated at the Festival, but it is very lightweight.

In contrast, food waste is typically a very heavy material. If too large of a container is used for food waste, there could be problems with bag breakage and the weight could cause a handling

problem for material recovery crews. The Festival for the Eno uses a 20-gallon plastic container for collecting food waste.

Trash containers at the Festival for the Eno are the same size as the food waste containers. There is some discussion at this time about using smaller containers for trash.

The Festival for the Eno currently uses standard curbside recycling containers for collection of beverage containers and paper. The rationale for using these containers is that they are the same containers used by Durham residents for curbside recycling, and the familiarity of the container encourages participation.

- *Aesthetics* – Overall, the recycling stations and containers should have a neat, organized, and consistent appearance. They should not be placed in an area that is necessarily “undesirable,” as this gives the wrong impression. The recycling stations should be prominent and part of the event, without obstructing activities.



*Common Ground County Fair, Maine.
Photo by Cindy Salter.*

Collection crews should be scheduled to ensure that no containers overflow. It is extremely important to include volunteers that serve as “floaters” who can move around the property checking on the status of the stations, keeping them neat, and dispatching additional volunteers if necessary. The containers should be kept clean and in good repair, and they should be replaced as needed.

Clear instructions - Regardless of the number or location of recycling stations at an event, the recycling containers must be clearly labeled with prominent signs with large and specific wording at eye level. In general, participants will not take the time to read complicated instructions.

If recycling stations are few and far between, there should be additional signs directing the public to the nearest one. Signs should be consistent from one station to the next.

If displayed properly, it can be very effective to have physical samples of the accepted materials just above the appropriate container. Again, the message should be clear and consistent. If samples are used, make the presentation neat and simple—remember that someone has to take it down at the end of the Festival.

Section 7: Putting it All Together

Sample timeline

Evaluating the recycling program

Sample timeline

The following sample timeline is provided with permission from University of Northern Iowa, Center for Energy and Environmental Education, School of Health, Physical Education and Leisure Services.

One Year Prior to the Event

- Determine the amount of garbage produced
- Identify on and off-site sources of trash
- Observe patron trash disposal behavior
- Note the location and number of trash barrels used
- Determine how garbage is collected and removed from the site
- Assess the items used and sold by vendors
- Identify special event programming that causes many people to exit the grounds simultaneously

11 Months Prior to the Event

- Appoint recycling committee and chair

10 Months Prior

- Determine budget needs
- Establish theme
- Develop sponsor solicitation plan
- Inform vendors of recycling project

9 Months Prior

- Identify prime sponsor and other supporters and announce to the public
- Determine whether an education program will be offered. If yes, appoint subcommittee
- Determine recycling categories in conjunction with local recycling providers
- Modify or establish vendor contracts (if applicable) to reduce waste and increase the proportion of recyclable products

8 Months Prior

- Begin design of recycling stations
- Begin operational planning
- If applicable, announce poster contest

7 Months Prior

- Complete recycling station design, including materials list
- Complete operational planning and secure agreements with recyclers and garbage haulers

6 Months Prior

- Recruit individual and group volunteers
- Begin acquisition of materials for stations and grounds

5 Months Prior

- Begin fabrication of station and grounds elements

4 Months Prior

- Complete all necessary items for recycling stations and grounds
- Feature a station in a public relations event
- Test weather readiness of a station
- Send out vendor contracts (or continue on regular contract schedule)
- Provide detailed information to vendors regarding where substitute materials can be purchased
- Poster contest deadline (if applicable)

3 Months Prior

- Walk grounds to check feasibility of operational plan
- Judge posters (if applicable)

2 Months Prior

- Announce poster winners (if applicable)
- Order volunteer recognition items

1 ½ Months Prior

- Call each vendor and follow up on questions

1 Month Prior

- Convene volunteers for orientation
- Determine volunteer schedules
- Assign installation and take-down crews

3 Weeks Prior

- Prepare written volunteer work schedule and send to volunteers
- Work with local media to encourage news and feature stories

2 Weeks Prior

- Confirm recyclables and garbage hauling schedules

1-3 Days Prior

- Hold volunteer training sessions
- Distribute volunteer identification items

1 Day Prior or Morning of the Event

- Set up recycling stations, signage, posters (if applicable) and education area (if applicable)
- Locate dumpsters appropriately

1 ½ Hours Before Opening

- Begin circulation among vendors to answer questions and pick up cardboard

1 Hour After Event Begins

- Begin emptying containers at recycling stations
- Begin continual inspection of dumpsters to prevent contamination

1 Hour After Multi-Day Event Closes for Other Than Last Day

- Empty all barrels and turn over all but garbage receptacles
- Continue circulating among vendors until they have left for the day
- Secure dumpsters to be left overnight

After Closing on Final Day of Event

- Begin closing stations farthest from eating area and vendors
- Begin take-down of these stations
- Assist vendors in clean-up and recycling
- Secure carefully any recyclables dumpsters after checking for contamination

Morning After Event

- Confirm dumpster removal
- Check grounds for program materials that may have been overlooked

1 Week After Event

- Convene recycling committee to evaluate program
- Announce preliminary results
- Adjust operational plan as necessary
- Elect chair and begin preparations for following year

Evaluating the recycling program

How will you know if your program is working? How will you know where improvements are needed? Direct observation of participation and levels of contamination are important qualitative approaches to program evaluation. It's always good to assign one or more individuals among the recycling team to observe, take notes, take pictures, and talk to willing participants. Have a written survey at the education tent or at the exit area for willing participants to complete. These qualitative assessments are valuable in looking for improvements in the future.



"Meet in the Street" Festival, Wake Forest. Photo by Eric Lusk, courtesy of The Wake Weekly.

Volunteers are perhaps the best resource for program evaluation, as they are the eyes and ears of the recycling program. Convene a post-event gathering of key volunteers to offer perspectives on the program. This should occur very soon after the event, while memories are fresh. Use this gathering as an opportunity to thank volunteers for their efforts. Document the volunteers' comments and have them on hand when planning begins for the next event.

Keeping track of details throughout the planning process as well as during the event may seem like a lot of work, but it can provide invaluable information for the next event. Try to keep all documentation, notes, data, etc. in one notebook or file for easy reference in the future. Accurate records are especially critical when and if a turnover in personnel or key volunteers occurs.

The success of a recycling program can be measured in many ways. Positive feedback from participants, sponsors, vendors, the press, or the community at large is a qualitative measure. Quantitative results can be measured by the actual amount of waste diverted from one year to the next. This requires additional effort and resources, but the feedback is important to improve the program.

Section 8: Case Studies

Festival for the Eno (Durham, North Carolina)

Common Ground Country Fair (Unity, Maine)

Whole Earth Festival (UC-Davis, California)

1999 Special Olympics World Summer Games (Research Triangle Park, North Carolina)

Festival for the Eno

This three-day, Fourth of July Festival just celebrated its 20th anniversary in 1999. Organized by the Eno River Association, a non-profit group formed to preserve the Eno River, the festival attracts as many as 40,000 people from around the state. To be consistent with the event's environmental message, in 1992 the Association made a commitment to strive for a garbage-free festival. A collaborative effort of organizers, sponsors, vendors, volunteers, and participants minimizes the amount of waste generated while recycling and composting as much as possible.

Most of the residuals from the Festival for the Eno are generated by food and beverage vending. There are normally 22 food vendors at the Festival. Event organizers and vendors work together before and during the event to reduce excess packaging and other waste, and to ensure that food service items such as plates and cups are recyclable or compostable when possible. A provision in the vendors' contracts specifically addresses their role in the recycling program (see sample in Appendix A.) One or more of the Festival staff members or recycling volunteers are responsible for communicating with vendors throughout the event to ensure compliance and to maintain a dialogue. Vendors are allowed to use the recycling stations for recyclable materials, but they are required to take their trash out with them. A significant factor in the success of the recycling program is the high rate of return vendors. Competition is strong and vendor spaces are limited, so it behooves vendors to cooperate.

Over 100 volunteers assist with recycling and composting. They help set up recycling stations, make signs, answer questions, monitor the stations, service collection routes, build the compost pile, and even recruit and train other volunteers. These volunteers are a vital link in the success of

the program, as they also serve to educate Festival participants about the importance of proper separation and to answer specific questions. The high rate of diversion and the low rate of contamination are attributed primarily to the presence of volunteers at the stations and the level of awareness of loyal festival attendees.

Instead of garbage cans, the Festival provides a number of recycling stations throughout the grounds. These stations have separate receptacles for each of the material types generated during the Festival. Materials presently recycled at the recycling stations include glass bottles, aluminum cans, polystyrene plates and cups, newspapers, and compostables (food scraps, paper plates and paper cups). Cardboard packaging is recovered directly from food and beverage vendors for recycling. Signs and examples of proper and improper materials are displayed at each of the stations. Most of the recycling stations are monitored by volunteers to make sure that materials are properly placed. Another team of recycling volunteers is assembled to collect the materials from the recycling stations at the necessary intervals.

Prior to the Festival, the Association arranges with local companies and organizations to recycle or compost the recovered materials. Some have provided their services as a community contribution, although this may not always be the case. Tidewater Fibre Corporation, the municipal recycling contractor for the City of Durham, provided recycling services for all recyclables (beverage containers, cardboard, and paper) except polystyrene at the 1999 Festival at no charge, and also provided recycling education and outreach at the Festival. The Festival's food waste was composted at a nearby site on City property and managed by Organics Matter, a local composting business that has donated its services since 1996. The finished compost is used during subsequent Festivals for display, plant sales, educational purposes, and recently in a garden at the West Point on the Eno Park. In this way, Festival attendees are able to actually see the results of their participation in the recycling program. Over the last several years, the Eno River Association has paid a fee to Orange Recycling Services of Durham for food-grade polystyrene recycling. Due to the rising costs of this service, alternatives to polystyrene food and beverage serving items are being considered for future festivals. Trash removal has been provided by the City of Durham Sanitation Department at no charge.

Although recycling has taken place at the Festival for the Eno for several years, 1998 was the first year that trash and recyclables were quantified. Quantities of recyclables were reported by their respective handlers/processors. Food waste and trash was weighed by the composting crew using a 400-lb. capacity postal scale. Each bag was individually weighed. The amount collected by weight of each material type (and percent by weight) at the recycling/trash stations in 1998 and 1999 is summarized below. The per capita waste figure of 0.17 pounds per person (including recyclables) is based on an estimated attendance of 40,000 in 1998 and 32,000 in 1999.

Attendance was down in 1999 due to record-setting heat.

Festival for the Eno Waste Diversion 1998 & 1999							
Year	Food waste (lbs)	Recyclables** (lbs)	Polystyrene (lbs)	Trash (lbs)	Total waste stream (lbs)	Estimated lbs/person	Total Diverted (lbs)
1998	3,516 (51%)	2,061 (30%)	512 (7%)	781 (11%)	6,870	0.17	6,089 (88%)
1999	2,784 (51%)	1,580 (29%)	460 (8%)	611 (11%)	5,435	0.17	4,824 (88%)

*Includes food scraps, paper plates, paper cups, napkins, food-contaminated paper & OCC

**PET bottles & 6-pack rings, aluminum cans & foil, newspaper, OCC, glass containers

The diversion rate of 88 percent can be attributed to the partnership among organizers, sponsors, vendors, and volunteers, and the active participation of Festival attendees. The Festival for the Eno has been recognized as a statewide leader in special event recycling. In 1998, the Eno River Association was honored with a "Spotlight Award" from the Carolina Recycling Association. Organizers continue to look for new ways to improve the recycling program and to move closer to the goal of being "trash-free."

Common Ground Country Fair

With the help of about 300 volunteers, the Common Ground Country Fair in Unity, Maine, sponsored by the Maine Organic Farmers and Growers Association, diverts close to 90% of its waste stream every year. Attendance at the three-day annual fair celebrating rural living is about 50,000 visitors, with about 60 food vendors.

Their program uses a majority of the volunteers to inspect and sort all incoming materials at the “Zero Garbage Tent” – a small-scale, on-site materials recovery facility. Other volunteers retrieve materials from the 178 collection stations, each having 2 containers: a standard 55-gallon drum for compostables and a 40-pound grain bag used for recyclables and other discards. Volunteers also provide interaction with the public at the “Zero Garbage Education Booth.”

Volunteers are used in the recycling and composting effort in setup before the event (62 volunteers over 4 days), during the event (148 volunteers over 3 days), and after the event (88 volunteers over 4 days). Job tasks include placing recycling barrels, setting up education booths and sorting area, picking up full containers, sorting materials at the “zero garbage tent”, dismantling and cleanup.

At Common Ground Country Fair, food vendors serve food almost exclusively in compostable paper products (not plastic coated) and purchase ingredients in recyclable or compostable bulk packaging. Most of the food vendors voluntarily keep their compostable materials and separate them from recyclable and waste materials, further facilitating the efforts of the recycling program. The organizers of the event's recycling program are considering the bulk purchase of biodegradable cutlery and bags next year to further reduce waste. The Maine Organic Farmers and Gardeners Association (MOFGA), the fair sponsor, holds a permit from the state's environmental agency to compost the food waste and compostables on the grounds of the fair. MOFGA has an arrangement with a local farmer to turn the compost windrows.

In addition to the high numbers of recycling/trash stations, successive signs using clever limericks are used to remind fair-goers to recycle. Articles about the recycling program are included in the event program to further get the message across.

Whole Earth Festival at the University of California-Davis

An integrated solid waste prevention strategy was conceived and implemented to minimize waste generation at this student-run, on-campus event. This two-day event attracts approximately 30,000 attendees and 16 food vendors. All food vendors (including the on-campus restaurant) were required to use only materials that could be recycled or composted. This required close communication with the vendors well in advance of the event. A deposit of \$100 was collected from vendors to encourage their compliance with the program. Restricted items included heavily waxed cups and bowls, plastic utensils, and other common waste materials. Non-waxed paper cups or #1 plastic cups were used for beverages. To further reduce waste, strategies were employed such as substituting napkins for plates and encouraging "finger foods." Additionally, the event organizers purchased and supplied biodegradable bags and utensils at cost to the food vendors. It was estimated that each vendor used 500 to 1,000 of the biodegradable utensils at a cost of \$20-30 per vendor. Organizers also allowed vendors some flexibility in achieving waste reduction. One vendor brought reusable cups and charged a deposit to customers rather than using recyclable or compostable cups. Another vendor offered a discount to customers who brought their own cup.

Event organizers borrowed large PVC frames from the campus recycling department and made signs for their recycling information out of cardboard mounted on the frames.

The biodegradable bags and utensils, along with any remaining food scraps, were collected and composted at a campus composting facility (the UC-Davis Student Farm). These efforts resulted in a waste diversion rate of 81 percent. The trash component from the Whole Earth Festival was mostly brought in from outside of the festival.

1999 Special Olympics World Summer Games

The 1999 Special Olympics World Summer Games were held in the Triangle region of North Carolina from June 26 through July 4. This international event drew 7,000 athletes and 3,000 coaches from 150 countries to compete in 19 different sports. In addition, over 35,000 local area volunteers were recruited to help put the Games together and to provide a comprehensive support program for the athletes, coaches, and families.

Logistical planning for this event began well in advance. In mid-1998, representatives of the Special Olympics Games Organizing Committee (GOC) requested a meeting with local solid waste and recycling professionals to discuss the logistics of solid waste management at the Games. The GOC was particularly interested in recycling and composting to minimize the adverse environmental impact of the Summer Games on local solid waste management systems. To facilitate this endeavor, three committees of local professionals were assembled—one each for solid waste disposal, recycling, and food discards composting.

The committee for food discards composting prepared an operations plan for composting during the Summer Games, which outlined the logistical details of collection, transportation, composting, and final product use. Direct financial support for the program was obtained from the Division of Pollution Prevention and Environmental Assistance (DPPEA) in the North Carolina Department of Environment and Natural Resources (DENR). The University of North Carolina at Chapel Hill, North Carolina State University, Meredith College, and the Town of Chapel Hill provided additional in-kind support for the composting project.

The primary objectives of the composting project were to evaluate the feasibility of diverting food discards that would ordinarily be landfilled and to demonstrate viable recipes for the composting process to produce high-quality compost. The composting committee decided to target food discards from the dining halls at the three universities where the athletes were housed during the Summer Games (UNC-CH, NCSU, and Meredith College).

The meals were served buffet-style, using paper plates, waxed paper cups, and plastic utensils. Some of the paper plates were coated with thin plastic and were not suitable for composting. Some of the waxed cups and non-coated paper plates were composted, but the material collected for composting was primarily leftover food. Plastic utensils were discarded.

To accomplish the food discards diversion, a pool of 62 volunteers was assembled from groups such as state and local government, local recycling associations, and local high school environmental clubs. "Diversion stations" consisting of tables and containers were set up near tray-return areas and dishwashing rooms at each of the dining halls. The diversion stations were staffed by volunteers and dining hall personnel, who oversaw the proper separation of compostable food discards from non-compostable items.

When the 40-gallon containers used for collection were full of clean food discards, they were transported to one of two compost sites (one in Chapel Hill and one in Raleigh). The total amount of food discards diverted from over 150,000 meals served was 21,624 pounds (10.8 tons). Over a third of this total was transported to the Chapel Hill compost site (7,736 pounds), and the remainder (13,888 pounds) was taken to the Raleigh site.

Provisional operating permits were obtained for the two composting sites to receive and compost food discards from the Summer Games. The Chapel Hill site was located within the boundaries of the Orange Regional Landfill and was managed by The Removable Feast of Durham. The Raleigh site was located at the NCSU Centennial Campus' existing composting facility in Raleigh, which normally handles only campus and municipal yard waste. The NCSU site was managed by its own operating staff with assistance from staff from DENR-DPPEA.

At both composting sites, the composting process worked extremely well, with no problems reported. The composting mix recipes used, while different at the two sites, were successful in raising composting temperatures to the desired range quickly, and both sites met the regulatory requirements for pathogen destruction.

Plans were made to use the finished compost the following winter and spring in a variety of plantings to commemorate the Summer Games and to demonstrate the beneficial effects of compost as a soil amendment. Planned sites for compost use included UNC-CH's Botanical Garden, NCSU's J.C. Raulston Arboretum, the Bell Tower on NCSU's central campus, S.E.E.D.S. demonstration garden in Durham, and North Chatham Elementary School.

In North Carolina and beyond, this project set an important environmental management precedent. Benefits of the project go beyond the successful diversion of nearly 11 tons of food discards from North Carolina landfills. Perhaps the most important benefit is the institutional knowledge of food discards composting gained by the Games Organizing Committee as well as the hosting universities and communities. This acquired knowledge enabled Special Olympics and other organizers to pursue composting at future events with a higher level of confidence and efficiency.

For a summary of the recycling program at the Summer Games, see the article in Appendix D.

Appendices

Appendix A: Vendor Materials

Information

- ◆ The Eno River Association wishes to avoid duplication of food items at the Festival and to encourage a variety of ethnic foods. Vendors may sell only designated foods as agreed upon in the contract.
- ◆ Photo or diagram of booth WITH SIGNAGE is to be included with application.
- ◆ Vendors may sell no beverages except by written agreement with the Eno River Association. Soft drink booths at the Festival are run by the ERA to raise money for parklands.
- ◆ Generators are not allowed.
- ◆ Proof of insurance will be required if accepted.
- ◆ Booths must comply with Durham County Health Department Regulations and the Fire Codes of the Durham City Fire Dept.
- ◆ Supplies should be sufficient to operate the food booth for the three days of the Festival.
- ◆ The food booth cannot be shared or transferred.
- ◆ The Festival is trash free. All vendors must comply with guidelines put forth to help make this possible.
- ◆ The flat fee for booth space is \$400. It will be due, in full, by May 31 if this application is accepted.
- ◆ This application should be returned by April 12th to be considered for the 1999 Festival. There is no application fee. Please complete the application and return to —

Festival for the Eno
Food Vendor Application
4419 Guess Road
Durham, NC 27712
Festival Office Phone: (919) 477-4549

Application Form for Food Vendor

20th FESTIVAL FOR THE ENO — JULY 3, 4 & 5, 1999

☐ Check here if this is a new address. *Please Print*

Name _____ Business Name _____
Street Address _____
City _____ State _____ Zip _____
Phone: Day _____ Evening _____
Business Owner's Name _____
Business Owner's Phone: Day _____ Evening _____

Please list the food items you wish to sell at the 1999 Festival:

Our electrical supplies are limited. All vendors should keep their electrical needs to a minimum. We provide 110 volts AC only. Any special electrical hook-ups or adaptations will be performed by the Festival Electrician and charged to the vendor. List each electrical appliance you plan to use with wattage and amperage. Include all heating and cooling units, fans, microwaves, etc. Accepted vendors whose electrical needs exceed those agreed upon in their contract will not be accommodated for their additional needs.

Appliance _____	watts _____	amps _____
Appliance _____	watts _____	amps _____
Appliance _____	watts _____	amps _____
TOTAL AMPS REQUESTED		
TOTAL SIZE OF VENDING UNIT	ft. by _____	ft. _____

West Point on the Eno is a Durham City Park. No alcohol may be consumed in the park. There is no camping at the Festival site. Park closes at sunset.

Please return this form by April 12, 1999 to:

Festival for the Eno Food Vendor Application
4419 Guess Road, Durham, NC 27712
Don't forget to enclose your photo or diagram of booth and signage with completed application. Photos cannot be returned.

THIS WENT WITH
APPLICATION

1998 Festival for the Eno
4419 Guess Road
Durham, NC 27712
919-477-4549

IMPORTANT INFORMATION **for** **APPLYING VENDORS**

A Trash-Free Festival starts with you.

Read the following information before filling out the application form. If you have any questions about any aspect of our Trash Free Festival please call Judy Allen at 477-4549.

All serving materials given to the customer must be recyclable or compostable.

ITEMS YOU CAN USE FOR SERVING:

6 polystyrene
Waxed paper
Paper or wood

ITEMS YOU CANNOT USE FOR SERVING

Aluminum foil
Individual packets of condiments are not allowed due to high contamination rate in the compost.

Any EXCEPTIONS must be approved by Festival Staff.

You will need to supply your own garbage cans with lids and an ample supply of plastic liner bag. You must carry **ALL** trash out of the Park in your vehicle. Do not use any on-site garbage cans for your booth's trash. There will be recycling bins on site for:

* Glass * Aluminum Cans * #6 Polystyrene * Uncoated Paper * Cardboard (uncontaminated)

All concessionaire personnel must follow the rules and policies of the Festival for the Eno, the Durham Health Department and the Durham Fire Department.

1997
Spotlight Award
for Excellence in
Waste Reduction and Recycling

Presented to
Judy Allen
The Festival for the Eno

March 3, 1998

Date

Carole J. Clifts

President

N.C. Recycling Association

I want to thank all those who participated in the 1997 Festival for the Eno. Your cooperation with our recycling program helped us to win the above award. Reducing the waste that would otherwise go into the landfill makes us all winners. It means a lot to the Festival for the Eno and to the many volunteers who work so hard to make this program a success.

Judy Allen
Festival Coordinator

THIS WITH A STANDARD
COVER LETTER

Food Concession Contract
Festival for the Eno
4419 Guess Rd.
Durham, NC 27712
919-477-4549

PLEASE READ ALL OF THE ATTACHED INFORMATION CAREFULLY AND COMPLETE EVERY BLANK LINE, SIGN AND DATE THE CONTRACT AND RETURN ONE COPY TO THE FESTIVAL AT THE ABOVE ADDRESS.

Date: May 17, 1999

LETTER OF AGREEMENT BETWEEN hereinafter referred to as the CONCESSIONAIRE and the ENO RIVER ASSOCIATION hereinafter referred to as the ASSOCIATION.

The undersigned, on behalf of the Concessionaire, agrees that the group will operate a food concession in a manner satisfactory to the Association and the Durham Health Department on Saturday, July 3, Sunday, July 4, and Monday, July 5, at the 1999 Festival for the Eno at West Point on the Eno, City Park, Durham, NC.

* Festival hours are 10 a.m. to 7 p.m. each day.

* All set-up vehicles must be out of the park by 9 a.m. each day and may not return until 7 p.m. each day.

* The booth should be set up on Friday, July 2, with day preparation done each morning.

CONCESSION LOCATIONS ARE ASSIGNED BY THE FESTIVAL COMMITTEE. THE CONCESSIONAIRE AGREES TO OPERATE IN THIS LOCATION FOR ALL THREE DAYS OF THE FESTIVAL.

CONCESSIONAIRE AGREES TO PROVIDE:

1. Four stands and one Fruit Smoothie booth
2. Equipment, utensils, and personnel (mature and sufficient in number) for operation of his or her vending unit. All concessionaire personnel must be familiar with and follow the rules and policies of the Festival for the Eno and the Durham Health Department.
- * 3. All supplies as needed for serving food (cups, plates, utensils, napkins, etc.) . Make sure that these are all recyclable (#6 plastic or uncoated paper) not aluminum foil. No individual packets of condiments are allowed due to high contamination rate in the compost. Any non-recyclable items must be approved by Festival Staff.
- * 5. One tent, tarp, trailer or constructed booth to be set up on Friday July 2, in the assigned location. CHECK WITH JUDY ALLEN BEFORE YOU BEGIN TO SET UP YOUR BOOTH TO BE SURE YOU ARE IN THE CORRECT PLACE.
- * 6. Signs designating the name of the concession, food items, prices, etc.
7. Two large garbage cans with lids and an ample supply of plastic liner bags. YOU MUST CARRY ALL TRASH OUT OF THE PARK IN YOUR VEHICLE. DO NOT USE ANY ON-SITE GARBAGE CANS FOR YOUR BOOTH TRASH. ALL GREASE AND FOOD WASTE MUST BE REMOVED FROM PARK-NO DUMPING. There will be clearly marked recycling containers on site.
8. Tables, counters and chairs as needed. A countersunk sink with a holding tank for waste water. WASTE WATER MUST NOT BE DUMPED ON THE GROUND, BUT MUST BE CARRIED TO THE MARKED STORM DRAIN BEHIND THE MCCOWN-MANGUM HOUSE. THIS DRAIN IS FOR WATER ONLY -- NO GREASE OR FOOD WASTE.
9. Soap and towels for washing hands. A bucket of bleach and water for washing hands. A bucket of bleach and water for disinfectant purposes. Keep rags for wiping down counters in the solution. Solution should be at least 1 tablespoon of bleach to a gallon of water. See Health Department regulation.
10. Sufficient change and cash boxes. CHANGE WILL NOT BE PROVIDED BY THE ASSOCIATION AT THE FESTIVAL. NO EXCEPTIONS.
11. Drop cords as needed if you have been granted access to electricity (up to 200 ft. to the utility supply pole.) These must be 12 gauge or heavier, not household extension cords.
12. At least two garden hoses with one garden hose "Y" adaptor and a "gun" type pressure nozzle. Water must be kept under pressure. THE NOZZLE OF THE HOSE MUST BE OFF THE GROUND AT ALL TIMES.

THE ASSOCIATION AGREES TO PROVIDE:

1. Electricity. Electrical service is limited at the Festival and is allotted according to designated needs as indicated on your application. Overloading the circuits will cause power loss for all vendors. Any special electrical hook-ups or adaptations will be performed by the Festival Electrician and charged to the vendor.
YOU HAVE BEEN APPROVED FOR AMPS (110 AC ONLY)
2. Potable running water (see #11 above).
3. Ice. The Association will have ice for sale.
4. You will receive FIVE (5) PARTICIPANT PASSES EACH DAY FOR PEOPLE WORKING IN YOUR BOOTH. These will allow you and your workers to enter the Festival at no charge.

ASSOCIATION AGREES TO PROVIDE (cont.)

5. Two (2) car passes for vehicles needed to bring in supplies for your booth. You may keep one (1) vehicle in the park to run errands. THIS VEHICLE MUST BE PARKED IN YOUR DESIGNATED PARKING SPOT IN THE UPPER LOT AT THE PARK (speak to Judy Allen about this parking spot). The other vehicle may be used only for set-up and break-down and must be kept out of the park between 9 a.m. and 7 p.m. each day. It may be parked in the Participant Lot on Roxboro Rd. over the Eno River Bridge. Indicate the make and license number of the ONE on-site vehicle:

MAKE _____ LICENSE _____

ABUSE OF PARTICIPANT OR CAR PASS PRIVILEGES CONSTITUTES A VIOLATION OF THIS CONTRACT

THE UNDERSIGNED WILL COMPLY WITH THE FOLLOWING INFORMATION :

The undersigned agrees to pay the Association 40% of gross income. The payment should be made by sending a check or money order payable to the Eno River Association, 4419 Guess Road, Durham, NC 27712 by June 7, 1999. The Association assumes no risk for any unsold portions and does not guarantee minimum or maximum sales. The undersigned understands that this contract sets no limit on the number of servings sold.

All booth construction must be completed before the Health Department will issue your permit. For this reason, the Association recommends that concessionaires arrive and set up their booths on Friday, July 2, before the park closes at sunset. The undersigned will not start to prepare any food item at the Festival until the necessary approval is given by the Durham Health Department.

Concessionaires are monitored during the Festival on participation, performance and adherence to Festival and Health Department regulations. Participation in the 1999 Festival for the Eno does not guarantee participation in subsequent years.

The Concessionaire agrees to take full responsibility for the protection of his or her goods and property in the event of adverse weather conditions.

The undersigned agrees to abide by Durham Fire Department rules concerning tent size and flammability. All tents will be inspected and those which do not pass inspection must be removed. In this event, the Association will make no refund of fees or expenses to those involved. See the Fire regulations enclosed with this contract for further details.

West Point on the Eno is a Durham City park. No alcohol is allowed in the park. No firearms are allowed in the park. The park closes at sunset and has no camping.

The undersigned will limit themselves to the sales of items listed in this contract.

The undersigned will not distribute literature or provide any advertisement for any organization unless the literature or advertisement is approved by the Board of Directors of the Association.

Concessionaires will comply with all laws, ordinances, orders, decrees, rules, and regulations of any lawful authority, agency or government unit which apply to the use of their vending unit during the Festival for the Eno, and agrees to indemnify and hold harmless the Association, its officers, directors, representatives, employees, agents and sponsors for any penalties, fines, costs, expenses, or damages if the concessionaire fails to do so.

The Association shall not be responsible for any liability insurance or workers compensation insurance loss from the premises or operation of the Concessionaire, their employees, personnel or any of their contractors. The Association and the City of Durham are hereby exempt from any liability of loss, accident, injury, or death to any employees, personnel or contractors of the Concessionaire.

The Concessionaire shall provide the Association a certificate of insurance no later than June 7, 1999, showing current General Liability and Workers Compensation coverage. The Association, at their option, may waive this requirement.

The Association, its employees, agents or representatives shall not be responsible for any loss, damage, claim, or other injury to concessionaire, his or her employees, agents or representatives, for any cause whatsoever. Concessionaire assumes all responsibility for any loss, damage, claim or other injury to the concessionaire, his or her employees, agents or representatives, or to any property or goods of the same, whether caused by fire, theft, act of God, accident, or any cause whatsoever, and shall indemnify and hold harmless the Association, its employees, agents and representatives from any and all such loss, damage, claim, injury or other expense relating thereto.

Concessionaire will be permitted to leave goods or property on site overnight at concessionaire's sole risk. The Association recommends the removal of inventory and valuable equipment during non-operational times. The Association does not assume any responsibility for personal injury or for theft, loss or damage to any property or goods of the concessionaire, or for damage or loss resulting from the interruption of electrical power.

* The concessionaire will leave the park clean. All trash will be properly disposed of by the concessionaire through the removal of all refuse produced by the food booth's operation from the park in the concessionaire's own vehicle. All waste water will be properly disposed of in the designated drain behind the McCown-Mangum House. WATER ONLY. ALL GREASE AND FOOD WASTE MUST BE REMOVED FROM PARK BY VENDOR. NO DUMPING OF GREASE OR FOOD WASTE ANYWHERE ON THE GROUNDS. LITTER MUST BE PICKED UP FROM BOOTH SPACE AND IMMEDIATE SURROUNDING AREA.

The undersigned operates under the jurisdiction of the Durham Health Department. If the Booth does not comply with Health Department rules, the booth can be closed to the public. In this event, the Association will refund no fee or expense to the concessionaire. Read all enclosed materials, and call Marvin Hobbs of the Health Department (919-560-7800) about the specifics of the regulations concerning your booth.

Questions other than those concerning the Health Department regulations should be directed to the Festival Coordinator. The Festival phone is 919-477-4549.

The Association or the Concessionaire may terminate this agreement at any time prior to June 7, 1999. If the concessionaire shall fail through any cause to fulfill in a timely and proper manner the obligations under this agreement, the Association shall thereupon have the right to terminate this contract by giving notice to the concessionaire of such termination.

I, the undersigned concessionaire, have read, understood and accepted the terms of this Food Concession contract and the Health Department guidelines and agree to abide by the regulations set forth by the Eno River Association, Durham Health Department and Durham Fire Department. I understand that if I or members of my staff violate these regulations, my booth will be closed to the public with no refund of fees or expenses. Concessionaire verifies that all information given to the Association and the Durham Health Department is accurate and acknowledges that failure to provide accurate information will result in the cancellation of this agreement by the Association at it's option. If any of the terms, conditions or provisions of this agreement are deemed unenforceable, the enforceability of the remaining terms shall be governed and construed in accordance with the laws of the State of North Carolina.

Please print name of concession as you wish it to appear in the program

Date

Concessionaire's signature

Please print your name

Date

Festival Coordinator

Appendix B: Triangle Region Special Events

In the six-county region served by Triangle J Council of Governments, 32 major annual special events other than the Festival for the Eno were identified. Most towns in the region have at least one such annual event. A list of these 32 major special events appears in Table 1.

For each event, a contact person was identified and basic information was obtained about when the event is held and how many people usually attend. These events range in size from 1,500 to 70,000 attendees. The total number of people in attendance at these 32 events each year is approximately 612,000.

Each contact person was sent a questionnaire regarding the management of waste at his or her special event. The questionnaire asked what types of trash are produced by vendors, attendees, and others. It asked what items are collected for recycling and whether collection bins for composting are set up. If recyclables and compostables were not collected, the questionnaire asked what obstacles hindered the establishment of collection systems for these items. If these items were collected, the questionnaire asked what had been helpful strategies for doing so. Finally, the questionnaire asked whether the event had established any requirements for vendors regarding waste minimization, recycling, reuse, or composting. A copy of the questionnaire appears as Figure 1.

Of 32 events, responses were received from 20, a response rate of 63%. A summary of responses appears in Table 2.

The following types of trash were reported by questionnaire respondents: food; paper plates, cups, and napkins; plastic utensils; styrofoam; aluminum, plastic, and glass bottles; plastic straws; paper and plastic wrappers; cardboard; boxes; bags; paper flyers; paper from art projects; balloons; wood kabob sticks; juice containers; and plastic toys.

Of the 20 events in the sample, 13 had set up collection bins for at least one type of recyclable. Most of these collected cans and plastic bottles only. Two reported collecting cardboard in addition to beverage containers, and two reported collecting paper in addition to beverage containers.

Two of the seven respondents who reported no recycling added comments explaining why. One reported that recycling did not come up as an issue because different departments handle event planning and trash management. The other respondent said that the event, one with 5,000 attendees, did not produce much trash.

Several of the respondents from events with recycling reported measures that had helped with this effort. These included setting up recycling bins near trash cans, having volunteers empty

bins, parking a county recycling trailer on site, making the recycling bins very visible, using good signs, and using colored labels identifying recycling only containers.

Only one respondent reported that the event collected compostables. Compostables were collected in 5-gallon buckets with lids. At the end of the event, these buckets were carried to private composting sites in the area. Nine of the respondents explained why they did not collect compostables. The most common reason was lack of suitable space. Other reasons included limited staff, the need for public education, asphalt surfaces, a spread out crowd, and the difficulty of maintaining a compost site in a public area.

Five events reported some type of vendor requirements related to waste management. One required that vendors not use glass. Two required the use of paper containers, prohibited styrofoam, and required that cardboard be recycled. One required that drinks be sold only in cans or bottles. Finally, one merely required that vendors use the dumpster provided for them.

In addition to gathering information through the questionnaire, the project convened a focus group to discuss issues regarding waste management at the region's special events. Seven representatives participated in the focus group, representing eight different events.

The focus group started out by identifying types of trash produced at their events. In addition to the items listed above, the group cited the following sources of waste: grease and oil from frying; aerosol cans; newspapers; miscellaneous art supplies, including clay; aluminum foil; six-pack rings; light cardboard and miscellaneous paper; and animal waste.

The focus group then made a list of elements of their recycling programs that led to the success of these programs. These included the following:

- vendor education;
- return volunteers;
- dedicated trash crew volunteers, including partnering with other organizations, such as Cooperative Extension;
- attendee interest in recycling;
- spacious sites;
- doing composting on site;
- holding the event in a park instead of on the street;
- obtaining 5-gallon buckets;
- trading with waste haulers for recycling bins purchases instead of trash pick-up; and
- obtaining free recycling bins, such as empty 55-gallon drums.

The focus group next listed problems encountered in setting up successful recycling programs. These included the following:

- Lots of volunteers are needed.
- It takes lots of time to organize.
- There are not enough models for how to do this.
- Monitoring collection sites is necessary.

- There aren't incentives to recycle.
- Trash pick-up is "free" from the city and therefore buried in the budget, which is not the case with recycling.
- Space and locations for collection bins are limited.
- In the short term, it is expensive to buy containers and signs.

Finally, focus group participants made suggestions regarding what they would like to see included in a guidance document for waste reduction and recycling at special events:

- Identify sources of volunteers.
- Estimate how many volunteers it will take.
- Provide education materials for training volunteers.
- Discuss the use of food banks.
- Help visualize the amount and types of trash produced.
- Identify free or cheap sources of containers.
- Address how collection can best be planned where open streets prevent control over crowd flow.
- Address the possibility of using uniform signs and buying them in bulk.
- Address whether containers could be shared and warehoused when not in use.
- Address whether worm bins might be used and then given away at the end of the event.
- Do a case study of obstacles.

Table #1: Major Annual Special Events in the Triangle Region

Where	Event	When	Number of Attendees	Contact	Phone	Fax
Apex	Peak Week	Early May	15,000	Emily Shaffer	387-3065	387-3393
Benson	Mule Days	Late September	65,000	Deborah Carter	919-894-3825	919-894-1052
Carrboro	Carrboro Day	Early May	2,000	Terry Campbell	968-7716	968-7728
	July 4th Celebration	July 4th	5,000	Terry Campbell	968-7716	968-7728
Cary	Lazy Days	July	50,000	Dean Baldwin	469-4090	469-4304
	Spring Days	April	6,000	Dean Baldwin	469-4090	469-4304
Chapel Hill	Apple Chill	April	25,000	Kathryn Spatz	968-2785	932-2923
	Festifall	October	25,000	Kathryn Spatz	968-2785	932-2923
	Fiesta del Pueblo	October	20,000	Kathryn Spatz	968-2785	932-2923
Chatham County	Haw River Festival	Early May	2,000	Elaine Chiosso	919-542-4957	919-542-4957
Clayton	Harvest Festival	September	15,000	Sally Schleindwein	919-553-6352	919-553-1758
Durham	Centerfest	Late September	65,000	Shelli Dronsfield	560-2722	560-2704
Four Oaks	Acorn Festival	Mid May	2,000	Cleo Austin	919-963-3439	
Fuquay-Varina	Celebration of the Outdoors	May	10,000	Graham Myrick	552-1430	557-3112
Garner	4th of July Celebration	July 4th	10,000	Graham Myrick	552-1430	557-3112
	Heritage Festival	Early October	5,000	Phil Fleming	552-4947	552-4947
	Independence Day Celebration	July 4th	12,000	Terry McLeod	772-4688x229	
Hillsborough	Hillsborough Hog Days	Mid-June	30,000	Craig Lloyd	732-8156	732-6322
Holly Springs	Labor Day Festival	Labor Day	2,000	Len Bradley	557-3930	552-5569
Knightdale	Arbor Day Festival	Mid-April	1,500	Greg Sanders	217-2230	217-2209
Morrisville	Day at the Park	Late June	10,000	Alan Carroll	469-9760	380-6709
Pittsboro	Pittsboro Street Fair	Late October	5,000	Jackie Mabry	919-542-4621	919-542-7109
Raleigh	Artsposure	Mid-May	70,000	Joan Cheng	832-8699	832-0890
	First Night	New Years Eve	70,000	Joan Cheng	832-8699	832-0890
	Capitol 4th of July	July 4th	15,000	Carol Henderson	733-4994	715-4014
Rolesville	4th of July Celebration	July 4th	5,000	Ralph Wharton	556-5125	
Sanford	Fat Tire Festival	Late July	5,000	Larry Craig	919-775-8247	
Siler City	Chicken Festival	May	10,000	Terry Green	919-742-2323	919-663-3774
Smithfield	Ham & Yam Festival	Late April	25,000	Kevin Gullette	919-934-0887	919-989-6202
Wake Forest	Meet in the Street	Early May	10,000	Kim Marshall	554-8155	556-2677
	4th of July Celebration	July 4th	5,000	Rhonda Alderman	554-6140	554-6607
Wendell	Brightleaf Folk Arts Festival	Early October	15,000	Teressa Allmon	365-6318	366-2010

Table #2: Recycling at a Sampling of Special Events in the Triangle Region

Where	Event and Number Attending	Types of Trash	Recyclables Collected	Recyclables Comments	Composting	Composting Comments	Vendor Requirements
Benson	Mule Days (65,000)	cups, plates, wrappers, straws, balloons, boxes, bags	none	n/a	no	n/a	use dumpster provided
Carrboro	Carrboro Day (2,000)	food, drink cans & bottles	cans, plastic & glass bottles	n/a	no	locations & staff limited	no styrofoam, use paper containers, recycle cardboard
Carrboro	July 4th Celebration (5,000)	food, food & beverage containers, cardboard, paper from art projects	cans, plastic & glass bottles	n/a	no	locations & staff limited	no styrofoam, use paper containers, recycle cardboard
Cary	Spring Daze (6,000)	plastic & paper cups & bags, cardboard, plastic utensils, paper flyers	cans, plastic & glass bottles	lots of contamination; vendors use plastic and styrofoam cups	no	lack of space	n/a
Cary	Lazy Daze (50,000)	plastic & paper cups & bags, cardboard, plastic utensils, paper flyers	cans, plastic & glass bottles	lots of contamination; vendors use plastic and styrofoam cups	no	lack of space	n/a
Chapel Hill	Apple Chill (25,000)	paper cups, styrofoam, drink cans & bottles, food, paper flyers, cardboard, plastic	cans, plastic & glass bottles, cardboard	set up near trash cans	no	asphalt surface, spread out	n/a
Chapel Hill	Festifall (25,000)	paper cups, styrofoam, drink cans & bottles, food, paper flyers, cardboard, plastic	cans, plastic & glass bottles, cardboard	set up near trash cans	no	asphalt surface, spread out	n/a
Chatham Co.	Haw River Festival (2,000)	napkins, wood kabob sticks, food, drink cans & bottles	cans, plastic & glass bottles, paper	volunteers empty bins; county recycling trailer parked on site	yes: use 5-gallon plastic buckets with lids	compost carried to private sites in the area	sell drinks only in cans and bottles
Durham	Centerfest (65,000)	food, art materials, cans, plastic bottles	cans, plastic bottles	bins near trash, emptied often by volunteers and contractor	no	space limited, requires education	n/a
Four Oaks	Acorn Festival (2,000)	paper plates & cups, napkins, can drinks, plastic wrap	cans	use signs on trash cans	no	n/a	do not use glass
Fuquay-Varina	Celebration of the Outdoors (10,000)	food, paper, drink cans & bottles	cans, plastic & glass bottles	n/a	no	n/a	n/a
Fuquay-Varina	4th of July Celebration (10,000)	food, paper, drink cans & bottles	cans, plastic & glass bottles	n/a	no	n/a	n/a

n/a = no answer

Continued on next page

Table #2: Recycling at a Sampling of Special Events in the Triangle Region, Continued

Where	Event and Number Attending	Types of Trash	Recyclables Collected	Recyclables Comments	Composting	Composting Comments	Vendor Requirements
Garner	Independence Day Celebration (12,000)	cups, napkins, plates, cans	cans	n/a	no	not practical to maintain in public area	n/a
Hillsborough	Hillsborough Hog Days (30,000)	paper, plastics, can drinks	cans, plastic bottles, paper	n/a	no	n/a	n/a
Morrisville	Day at the Park (10,000)	cups, plates, napkins, cans, plastic bottles, paper flyers	cans, plastic bottles	use colored labels identifying recycling only	no	n/a	n/a
Pittsboro	Pittsboro Street Fair (5,000)	cups, plates, napkins, cans, plastic bottles, paper flyers	cans, plastic & glass bottles	recycling bins are very visible	no	n/a	n/a
Raleigh	Capitol 4th of July (15,000)	cans, plastic, styrofoam, food wrappers & containers, cups, paper flyers	none	different departments handle event planning and trash management	no	n/a	plan to add vendor requirements next year
Sanford	Fat Tire Festival (5,000)	plastic cups, plastic bottles, food wrappers, fruit	none	low volume of trash	no	low volume	n/a
Wake Forest	Meet in the Street (10,000)	food, plastic & cardboard packaging, drink containers	none	n/a	no	n/a	n/a
Wendell	Brightleaf Folk Arts Festival (15,000)	plastic utensils & bottles, cups, juice containers, balloons, paper flyers, plastic toys	n/a	n/a	n/a	n/a	n/a

n/a = no answer

Figure #1:

SPECIAL EVENT QUESTIONNAIRE

Event location: _____ Approximate date: _____ Number of Attendees: _____

Event name and description: _____

Contact person: _____ Title: _____

Contact's phone: _____ Fax: _____ E-mail _____

TRASH

What types of potentially trash-producing items are used and distributed by vendors?

What additional types of potentially trash-producing items are used and distributed by others conducting the event?

What additional types of potentially trash-producing items are used and discarded by attendees?

RECYCLING

For which recyclables are collection bins set up?

Aluminum cans _____ Plastic bottles _____ Glass bottles _____ Other (specify) _____

If collection bins *have not* been set up for the above items, what obstacles have hindered setting up these collection bins?

If collection bins *have* been set up for the above items, what have been helpful strategies for doing so?

COMPOSTING

Have collection bins for compostables been set up? Yes _____ No _____ If yes, what type?

If compost collection bins have not been set up, what obstacles have hindered setting up these collection bins?

If compost collection bins have been set up, what have been helpful strategies for doing so?

VENDORS

Are there requirements for vendors regarding waste minimization, recycling, reuse, or composting? If so, please attach a copy of the requirements.

THANKS FOR FILLING OUT THIS FORM.

Appendix C: References

Personal communications

- Harold Leverenz – UC Davis
- Scott Wilkerson & BJ Jones – Compost Connections
- Randy Smith – Traverse Co. Michigan

Publications

- “Recycling at Your Event: Recycling Advocates Guide to Reducing Waste at Any Event or Conference”, Recycling Advocates 1998 Portland, OR
- “It’s Easy Being Green: A Guide to Planning and Conducting Environmentally Aware Meetings and Events”, EPA 530-K-96-002, September 1996
- “Special Events Venues in Sonoma County: Waste Diversion Needs Assessment”, C²:Alternative Services, February 1999
- “Recycling for Festivals and Special Events”, Center for Energy and Environmental Education, School of Health, Physical Education and Leisure Services, University of Northern Iowa

Articles

- “Waste from Stadiums” by Randy Woods, *Waste Age*, April 1993
- “Special Diversion Methods for Special Events”, *Biocycle*, September 1995
- “Zero Garbage Project at the Fair”, *Biocycle*, March 1997
- “Minimizing Festival Trash”, *Biocycle*, September 1999
- “Festival Seeks Independence from the Landfill”, *Biocycle*, September 1999
- “Special Events: The role of recycling and composting”, *Resource Recycling*, September 1999

Websites

- www.sfrecycle.org/v2/fact/speeve.htm
- www.multnomah.lib.or.us/metro/index.html

Appendix D: Articles from *Biocycle* and *Resource Recycling*



Photo courtesy of Ben & Jerry's

ORGANIZERS of Ben & Jerry's One World One Heart Festival took on the challenge this year of collecting and composting the food scraps and containers left behind by 40,000 people attending a one-day musical event. The Vermont-based ice cream company has been hosting the free festival for the past five years as a way of thanking its customers. This year's concert, held on June 24 at the Sugarbush Ski Resort in Warren, Vermont, featured John Hiatt, Suzanne Vega and 10 other performers.

For the first three years, only glass and aluminum cans were collected and recycled. In 1994, Ben & Jerry's staff decided to compost the festival's food scraps and hired consultant Karl Hammer to come up with a plan. Hammer had been working with Ben & Jerry's since 1993 on finding ways to compost the residuals from the company's ice cream manufacturing process. He introduced two biodegradable products at the 1994 festival — Novon ice cream containers and 30-gallon biodegradable bags made of a Novon polymer distributed by Epic Enterprises.

Hammer was pleased with the 350 bags of food scraps and compostable containers collected after the 1994 festival. "We had a very clean sort. I went through every bag to see what had been put in them and only found three bags that needed to be pulled because of contamination by plastics and other non-compostables." Approximately 60 cubic yards of compost were generated in 1994 from festival leftovers, which were used on the Sugarbush Resort's extensive grounds.

Composting plans for the 1995 festival began almost as soon as the 1994 festival ended. "This year, we decided to take compost-

Food and drink vendors were required to use preapproved compostable plates, containers, cups and spoons. Festival staff assisted participants with separation.

RECYCLING/COMPOSTING STRATEGIES

SPECIAL DIVERSION METHODS FOR SPECIAL EVENTS

When thousands of people attend music festivals and fairs, it used to mean thousands of bottles, cans, paper cartons and leftover food winding up in trash cans. Not anymore!



Photo by Molly Farrell

ing a step further," says Sarah Sparks, Ben & Jerry's Special Events Coordinator, "and require food and drink vendors to only use preapproved compostable plates, containers, cups and spoons." Tim Lemieux, who works on the production line at the company's Waterbury ice cream plant, was appointed recycling and composting crew chief for the 1995 festival. He and other organizers began meeting with the 10 food and drink vendors in March, 1995 to discuss food container possibilities and develop a collection plan for the day of the festival. "We are so appreciative of the food vendors agreeing to use containers that may not always have been ideal for them in terms of food presentation," said Sparks. "It allowed us to take composting to another level at the festival."

On the day of the festival, instead of plas-

WORKING WITH COMMUNITY GROUPS

WHEN a local community group or nonprofit organization arranges a special one-day event, the Chittenden (Vermont) Solid Waste District will supply, on request, a recycling vehicle, containers and signage. In turn, the sponsoring group agrees to provide staff or volunteers to collect recyclables and prevent contamination, to inform vendors and exhibitors of recycling requirements, and to pay the processing fees for recyclables and tipping fees (for contaminated items.) Some one-day events assisted by CSWD include the Vermont Kids' Fest, the Youth Conservation Corps' Serv-A-Thon, and a benefit concert for endangered species.

For multiday events, CSWD does not provide equipment, but offers extensive technical assistance. A CSWD staffer walks through the event site with organization staff, talks with the event's hauler and prepares a report on what is required to meet the district's recycling requirements and how they can be best met at that site. Over

tic spoons, vendors distributed 14,000 biodegradable spoons made of EcoPLA, a bioplastic developed by Cargill. Food items were served on paper plates, and compostables were again collected in Epic's 30-gallon Novon polymer bags.

MANAGING DROPOFFS EFFICIENTLY

Lemieux's staff of 22 stood in pairs at seven brightly colored dropoff stations throughout the grounds. When a festival goer approached a station with leftovers, staffers helped them sort recyclables and compostables into the proper bags and containers.

Sugarbush provided 30 employees to help collect materials the day of the festival. One Sugarbush staffer worked behind the food vendor booths, removing bags filled with vendors' food scraps and replacing them with fresh bags. Other Sugarbush employees drove from station to station in the resort's golf carts picking up full bags of recyclables and compostables. The compostables were taken to one of five Sugarbush pickup trucks in a nearby parking lot and transported to an empty lot a half-mile away. There the bags were placed on a layer of horse manure and bedding. According to Hammer, 120 bags of compostables were collected, less than half of what was collected after the 1994 festival. "We probably got less because the 1994 festival was held over a two-day period, and this year it was only a one day event."

COMPOSTING SITE

The bags were assembled in a windrow and mixed with 35 yards of horse manure, 15 yards of loose, wet hay and some mature

the past year, the CSWD recycling coordinator has been advising the organizers of the Champlain Valley Exposition, an annual seven-day fair attended by approximately 300,000 people, on methods of increasing and streamlining the collection of recyclables at the fair.

Barbara Winters of CSWD created the special events program in the spring of 1994 in conjunction with her volunteer work at the Vermont City Marathon. To advertise it, she designed a brochure which was mailed to schools, town managers, park and recreation departments, chambers of commerce and other agencies. The brochure contains advice on how to reduce waste at events, including using recycled, recyclable and reusable materials, reducing packaging and composting leftover food scraps.

The state of Vermont followed suit in 1994 with a more generic Special Events Recycling Guide. The guide, which is distributed by the Vermont Agency of Natural Resources provides advice on choosing materials to recycle, selecting a hauler, sourcing recycling containers and equipment, collecting food scraps, working with vendors, and assigning recycling duties to volunteers.

SPECIAL EVENT RECYCLING

ZERO GARBAGE PROJECT AT THE FAIR

Maine event coordinates volunteers with a well-managed source separation system to recover almost 12 tons of compostables and recyclables from 60,000 fair attendees.

*B.J. Jones, Steve Peary
and Scott Wilkerson*

More than 200 volunteers are needed to help set up collection stations before the event, hang signs and clean up afterwards.



THE COMMON Ground Country Fair (CGCF) is an annual three day event held at the fairgrounds in Winslow, Maine. September, 1996 marked the 20th year of the fair. The 60,000 visitors celebrated rural living and generated a total of 13.9 tons of material. Volunteers helped recover 11.9 tons (86 percent) of the residuals for composting and recycling.

Sponsored by the Maine Organic Farmers and Gardeners Association (MOFGA), the fair features jugglers, stilt walkers, a children's vegetable parade, sheep shearing demonstrations as well as informational booths on solar energy and sustainable development. The food is primarily organically grown on Maine farms, prepared on site, and consumed in enormous quantities. More than 60 vendors supplied the visitors with foods ranging from maple syrup flavored ice cream to tempeh kabobs. The combined activities of the fair and the materials they generate result in a diverse stream of materials and an interesting challenge for resource recovery.

In 1988, Maine announced its intent to enact solid waste management legislation the following year. The two primary impacts of the proposed legislation were the implementation of municipal recycling programs and the closure of substandard landfills. It

was no surprise that MOFGA took a proactive approach and developed a solution for the fair's discard stream before being mandated to do so. The association worked with Resource Conservation Services to establish an organics recovery program for the fair. Soon thereafter, Winslow's landfill closed

and the facility reopened as a transfer station. This resulted in a tip fee increase from \$50 a year to \$50 a ton.

For the last five years, volunteers have coordinated the resource recovery program at the CGCF. Now called the Zero Garbage Project, the program includes source reduction (i.e., elimination of noncompostable or nonrecyclable packaging and supplies), public education and inspection of 100 percent of the



materials generated by the fair's operations.

The fair attracts more than 1,000 volunteers who contribute their time over two and one-half weeks. The Zero Garbage Project alone needs more than 200 vol-

unteers to make resource recovery happen. Some volunteers help set up collection stations before the event, others empty them during the fair, and still more clean up after the event. While some volunteers help for the full three days, the minimum requirement is a four hour shift. This earns a volunteer free fair admission and a volunteer t-shirt.

THE ZERO GARBAGE PROJECT

A core group of volunteers from Compost Connections, the University of Maine, and friends manage the project, which has recovered an average of 89.4 percent of the materials generated by vendors and attendees. These veterans operate equipment, weigh materials, and help educate first time volunteers about expectations, tasks to accomplish, inspection criteria and procedures.

The project consists of two components: the Zero Garbage Tent, located on the outskirts of the fair, and the Education Booth, located in the center of the fair.

The tent serves as the operational core of the project. From this location, a coordinator dispatches collection teams with garden carts to retrieve full bags from the collection points. Bags are brought back to the tent where the contents are dumped onto one of five inspection tables, each staffed with up to five volunteers. Compostables are in-

The project consists of two components: the Zero Garbage Tent on the outskirts of the fair which serves as the operational center, and the Education Booth located in the center of the fair.

Table 1. Common Ground Country Fair Zero Garbage Project

Material	Tons Of Material			Totals	Per Capita Avg (lb/pp)
	1994	1995	1996		
Returnables	0.088	0.180	0.240	0.507	0.007
Plastic, #2 Natural HDPE	0.134	0.218	0.183	0.545	0.007
Glass	0.047	0.058	0.074	0.177	0.002
Scrap metal	0.014	0.018	0.017	0.050	0.001
Tinned steel cans/foil	0.043	0.075	0.018	0.136	0.002
Recyclables total	0.306	0.558	0.551	1.415	0.018
Organics recovery total	12.150	15.880	11.420	39.890	0.499
Refuse	1.284	1.208	1.816	4.311	0.056
Wood residuals	0.171	0.130	0.125	0.426	0.005
Discard total	1.455	1.338	1.943	4.737	0.061
Totals	13.911	16.967	13.914	44.812	0.578
Materials recovery %	89.5	92.1	86.0	89.4	
Discard %	10.5	7.9	14.0	10.6	
Attendance	23,000	62,000	60,000		
Per capita recycle (lb/pp)	0.019	0.018	0.018		
Per capita organics (lb/pp)	0.736	0.487	0.381		
Per capita discard (lb/pp)	0.088	0.043	0.065		
Total per capita (lb/pp)	0.843	0.548	0.464		

spected for contaminants such as plastic coated food containers, juice boxes, and diapers. Volunteers also inspect the bags of recyclables and discards. Contaminants are removed and deposited into a refuse container at the front end of the table. Recyclables are taken to a rinsing station and sorted into appropriate categories and rinsed if necessary. After the inspections are complete, clean compostables are pushed off the end of the table into a container. When full, this container is emptied into a self-contained compacting unit.

All collected materials remain on site until after the fair. Volunteers weigh all bags of refuse and recyclables prior to transport to the local transfer station and recycling center. The fair sends the first compacted load of compostable organics to a local on-farm composting site on the Monday after the fair. The compacting unit returns to the grounds that day. The second and considerably lighter load leaves the site on Wednesday and the container stays off site. Volunteers complete all collecting, sorting, and transportation of materials by the Wednesday after the fair.

The Education Booth gives fair attendees an opportunity to gain hands on experience in resource recovery and specifically, the fair recovery system. Literature about composting, source reduction, recycling and other related issues is available. A backyard composting bin is in use. The biggest attraction at the booth, however, is an inspection table identical to the ones set up in the operations tent. The education booth coordinator explains the source separation procedures, conducts inspections of bags of compostables and solicits volunteers directly from the fairgrounds to help. Those will-

ing to participate receive a fair pin that carries the current fair poster design and the words, "I sorted my share at the common ground fair."

SOURCE SEPARATION AND REDUCTION

A dual stream separation system prompts fair attendees to separate their discards at any of the 178 collection stations into one of two containers. The larger container collects compostables, and the smaller one collects recyclables and other discards. The stations also have a sign post, holding the containers together, with a poster on each side illustrating the source separation program. Color coded examples show how to use the station.

Source reduction plays a major role at the fair. The per capita generation rate has decreased from 0.843 pounds per person in 1994 to 0.464 pounds per person in 1996 — a 44.96 percent reduction in the per capita generation rate in three years! Vendors now serve their food almost exclusively in compostable paper goods (not plastic coated) and purchase ingredients in compostable or recyclable bulk packaging. Vendors actively participate in the program by cleaning, preparing and sorting their recyclables and compostable scraps from food preparation. Examples include removing caps and neck rings from #2 plastic jugs, rinsing and depositing them at the ZGT, and sorting their compostable food scraps into wheeled totes to exchange at the ZGT for empty totes. ■

B.J. Jones is with Compost Connections, a consulting firm, in Gardiner, Maine. Steve Peary and Scott Wilkerson are with the University of Maine, Office of Resource Conservation and Recovery.

ZERO WASTE GOAL

MINIMIZING FESTIVAL TRASH

THE WHOLE EARTH Festival at the University of California-Davis is a student-organized event that takes place annually in early May. The weekend attendance is approximately 30,000 people, with 16 food vendors and 100-plus craft booths. One major emphasis of the festival is environmental sustainability.

To minimize waste generation, an integrated solid waste prevention strategy was conceptualized and implemented. The components were to: Exclude all materials from the system that were not easily biodegradable, reusable, or recyclable (given the local markets for materials recovery); Utilize a collection system that could easily accommodate biodegradable and recyclable materials; and Increase public familiarity with the collection system.

Food vendors and the on-campus restaurant participated by using materials that could be recycled or composted. Heavily waxed cups and bowls, plastic utensils, and other common waste materials were not allowed because of their ultimate fate as a waste product. Strategies were instituted to reduce material use, such as substituting napkins for plates and "finger foods." Biocorp degradable bags and utensils were purchased and supplied at cost to the food vendors and other food services.

COLLECTION SYSTEM

A three-stream collection method, divided into glass, compostables and noncompostables, was set up for the event. The non-



The biodegradable fraction of the waste stream is unloaded for composting (left). After three weeks in the windrow, paper and utensils have begun to decompose (right).

Weekend gathering in California adds to its celebration of environmental sustainability by recovering 81 percent of the discards.

*Harold Leverentz
and Mark Van Horn*



Volunteers sort materials discarded at the Whole Earth Festival in California.

compostables bins were hand sorted by volunteers, who emptied them onto a tilted table, removed the recyclable and waste fractions, and scraped the remainder (the biodegradable materials) into collection containers for composting.

Recovery stations were concentrated on the perimeter of the festival to facilitate easy collection and transport of materials to a centralized sorting location. Materials were either walked to the sorting area or collected with an electric dump vehicle. Several recovery stations at the interior of the festival were slightly harder to monitor and manage, but were considered necessary to prevent littering in those areas. The stations were regularly checked to keep contaminants out of the compost collection bins.

A waste audit was conducted to evaluate the performance of the waste prevention system. Waste stream characteristics are presented in Table 1. The primary contaminants in the biodegradable waste stream were plas-





Manure and straw are layered on top of compostables to form a pile (left). The material has broken down significantly after seven weeks of composting (right).



Table 1. Characteristics of material collected

Component	Volume (yd ³)	Weight (lbs)
Trash	48	2,940
Biodegradables	33	7,960
Glass	5	1,520
#1 & #2 Plastics	8	820
Aluminum	4	180
Cardboard/paper	23	1,955
Total	118	15,175
Diversion	80%	81%

tica. The trash component (mostly brought from outside of the festival) was comprised of nonrecyclable plastics (wrappers, bags, straws, etc.), heavily waxed paper products, diapers, and broken vendor merchandise. Dumpsters for recyclables and compostables were clearly labeled and kept at the perimeter of the event for bulk collection. The indiscriminate disposal into these dumpsters contributed to both contaminants in the compost and recyclable materials in the waste.

The overall diversion rate of 81 percent (by weight) is encouraging, but also suggests that there is room for improvement. A great deal of time was devoted to removing contaminants from the biodegradables and removing waste from the recyclable materials. Although signs were used to direct materials into the appropriate collection bin, many people showed little concern or confusion regarding which bin to use for their unwanted

materials. The lack of participation and problems posed by the implementation of a new collection system make public education critical. Future plans include posting volunteers at recovery stations to answer questions and further refinement of the materials and collection system.

RECYCLING ORGANICS

Starting in 1996, the UC Davis Student Farm began working with the festival in its composting program. This year, nearly four tons of the festival waste stream were composted.

Windrows were constructed after the festival with a front-end loader using a mixture of one ton of festival residuals, one ton of straw, and three to five wet tons of manure. The windrows were approximately nine feet wide at the base and four feet tall. The pile was layered with straw on the bottom, then manure, festival organics, and more manure on top. The windrows were left in this ar-

range ment for several days, allowing the paper products to absorb water from other materials and making them less likely to "float" out of the pile during turning, reducing the

two weeks.

Moisture was maintained at about 50 percent during the composting process. When the windrows began to dry out, water was added with an irrigation system consisting of pipe and half-round micro sprinklers spaced about every five feet. When necessary, water typically was added less than 24 hours before turning to increase the uniformity of moisture in the pile. Additional water was sprayed after turning if a higher moisture content was required.

Temperatures fluctuated between 130° and 150°F during the first three months of composting, then declined. At that point, the volume of the windrow had decreased by about 50 percent. The BioCorp utensils and bags, as well as unwaxed and lightly waxed paper products, had completely degraded. Contaminants such as plastic, glass, styrofoam and dense paper products were removed by hand as they "floated" to the outside of the compost windrow. Paper products at the edge of the windrow were reincorpo-

COMPOSTING ON CAMPUS

THE UC DAVIS Student Farm's Compost Project began in the early 1980s in conjunction with a program for selling student grown organic produce to an on-campus restaurant. Since it began, all of the kitchen residuals (other than meat) from the restaurant have been composted at the farm. About 90 percent of the food residuals are windrow composted with animal manure and bedding from nearby dairy and horse facilities on campus. The remaining 10 percent of the food residuals are taken to the farm's vermicom-

posting project.

In 1998, approximately 40 tons of kitchen scraps and 75 tons of manure and bedding were composted. The majority of the compost is used as a soil amendment in the farm's production, teaching, and research fields. Compost also is used in various departments for research and class projects and in campus landscaping. Finished vermicompost is incorporated into the farm's potting mix for starting transplants to use in organic vegetable, herb and flower production.

rated as needed. Finished compost will be applied prior to the planting of fall crops in late September.

Harold Leverette is a graduate student in the University of California-Davis Department of Civil & Environmental Engineering and organized the waste diversion program at the Whole Earth Festival along with Environmental Horticulture student Amelia Herndon. Mark Van Horn is with the university's Student Farm.

GARBAGE FREE STRATEGY

FESTIVAL SEEKS INDEPENDENCE FROM THE LANDFILL

THIS YEAR marks the 20th anniversary of the Festival for the Eno, held for three days over the Fourth of July holiday in Durham, North Carolina. Organized by the Eno River Association, a nonprofit formed to preserve the Eno River and help establish public parks along the Eno River Valley, the festival attracts as many as 40,000 people from around the state. To be consistent with the event's environmental message, in 1992, the association made a commitment to strive for a garbage-free festival. A collaborative effort of organizers, sponsors, vendors, volunteers and participants minimizes the amount of waste generated while recycling and composting as much as possible.

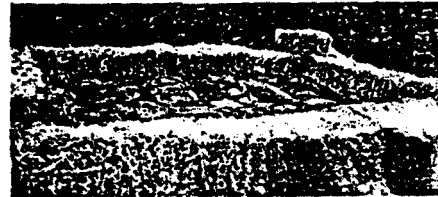
Most of the residuals from the Festival for the Eno are generated by food and beverage vending. Event organizers and vendors work together before and during the event to reduce excess packaging and other waste, and to ensure that food service items such as plates and cups are recyclable or compostable when possible. A provision in the vendors' contracts specifically addresses following the recycling program. Other exhibitors also are encouraged to reduce and recycle. A significant factor in the success of the recycling program is the high rate of return vendors. Competition is strong and vendor spaces are limited, so it behooves vendors to cooperate.

In addition, over 100 volunteers assist with recycling and composting. They help set up recycling stations, make signs, answer questions, monitor the stations, service collection routes, build the compost pile, and even recruit and train other volunteers.

RECYCLING STATIONS

Instead of garbage cans, recycling stations throughout the grounds have separate receptacles for specific materials, including glass bottles, aluminum cans, polystyrene plates and cups, newspapers, and compostables (food scraps, paper plates and paper cups). Materials such as cardboard packaging are recovered directly from vendors for recycling. Signs and examples of proper and improper materials are displayed at each of the stations, most of which are monitored by volunteers who also educate festival participants about the importance of proper separation and answer specific questions.

Observation of recycling station activity during the 1999 festival revealed that the



average visitor pays minimal attention to the signs or instructions. Ongoing efforts to improve the stations' effectiveness include better signs, adjusting container sizing according to material, and more efficient station placement.

The final component of the recycling program is the collection and processing. Another team of volunteers collect from the stations at the necessary intervals. Prior to the festival, organizers arrange with several local companies or organizations to recycle or compost recovered materials. A number of local companies provide their services as a community contribution, such as Tidewater Fibre Corporation, a paper recycler, at the 1999 festival. Tidewater also conducted recycling education and outreach at the festival as a provision of its contract with the City of Durham.

The festival's food residuals are composted at a nearby site on city property and managed by Organics Matter, a local composting

Public education such as this container display (left) minimized the work necessary to bring clean feedstocks to the compost pile (covered, right).

Environmentally oriented summer event in North Carolina recycles and composts its way to an 88 percent diversion rate.

Cindy Salter

Table 1. Quantities collected of each type of material at recycling/transfer stations

Year	Food Residuals (lbs)	Recyclables** (lbs)	Polystyrene (lbs)	Trash (lbs)	Total Waste Stream (lbs)	Estim. (lbs/person)	Total Diverted (lbs)
1999	3,516 (51%)	2,081 (30%)	512 (7%)	781 (11%)	6,870	0.17	6,089 (88%)
1998	2,784 (51%)	1,580 (29%)	480 (8%)	611 (11%)	5,435	0.17	4,824 (88%)

*Includes food scraps, paper plates, paper cups, napkins, food-contaminated paper & OCC

**PET bottles & 6-pack rings, aluminum cans & foil, newspaper, OCC, glass containers

Volunteer Mark Stribling sorts through food residuals in search of contaminants.

business that has donated its services for the last four years. The finished compost is used during subsequent festivals for display, plant sales and educational purposes. In this way, attendees see the results of their participation in the diversion program.

The Eno River Association pays a fee to Orange Recycling Services for polystyrene recycling. Alternatives to polystyrene food and beverage serving items may be considered in the future. Trash removal is provided at no charge by the City of Durham Sanitation Department.

DIVERSION FIGURES

Last year was the first in which trash and recyclables collected at the festival were quantified. Amounts were reported by their respective handlers/processors. Food residuals and trash were weighed by the composting crew using a 400 lb. capacity postal scale; each bag was individually weighed. The quantities collected by weight of each material type (and percent by weight) at the recycling/trash stations in 1998 and 1999 are summarized in Table 1. The percentages were quite consistent between the two years. The per capita waste figure of 0.17 lbs/person (including recyclables) is based on an estimated attendance of 40,000 in 1998 and 32,000 in 1999. Attendance was down in 1999 due to record-setting heat.

The diversion rate of 88 percent can be attributed to the partnership among organizers, sponsors, vendors and volunteers, and the active participation of festival attendees. "Recycling at the festival has been a great success due to the dedicated volunteers that make it work," says Judy Allen, festival coordinator since 1995.

The Festival for the Eno has been recognized as a statewide leader in special event recycling. In 1998, the Eno River Association was honored with a "Spotlight Award" from the Carolina Recycling Association. In



BioCYCLE

ZERO GARBAGE TENT AT THE FAIR

ABOUT 50,000 visitors attend the three-day Common Ground Country Fair (CGCF) held each year in Maine to celebrate rural living. Last year's 22nd annual event took place at a new permanent facility in Unity, which includes 35 acres of fairgrounds and a Zero Garbage Tent serving as a mini-MRF for the 14 tons of discards generated. Thanks to the work of several hundred volunteers and a coordinating five-member core group, an 89 percent recovery level was achieved — diverting more than 13 tons to composting and recycling.

The Maine Organic Farmers and Gardeners Association (MOFGA), which sponsors the fair, received a permit-by-rule composting permit from the state's Department of Environmental Protection for on-site composting. At the previous location in Windsor, compostables were collected in a 20-cubic yard compactor for transport to a separate site.

Space allocated to the sorting tent is twice the size as before, and there is room for cardboard and mixed paper collection dumpsters and the ability to empty them on call because of access to a service road during the fair. These materials are taken to the local recycling center for inclusion in the town program. The hauling and dumpster rental were covered by a local hauler in part for the value of the cardboard and mixed paper. All other recyclables and waste continue to be stored on-site until after the fair,

when they are transported to the recycling center and transfer station by fair volunteers. Added benefits of managing compostables on-site are the ability to demonstrate windrow turning and the use of fair-generated compost in the landscaping and soil building activities around the fairgrounds, rounding out attendees' ability to follow industrial and agricultural composting programs from soup to nuts, literally.

SOURCE SEPARATION AND REDUCTION

A dual stream source separation system prompts fair attendees to separate their discards at any of the more than 140 collection stations into one of two containers. The larger of the two, a standard 55-gallon drum, is for compostables. The smaller container, a 40-pound grain bag, collects recyclables and other discards.

Source reduction plays a major role at the fair. The per capita generation rate has decreased from 0.843 lbs/person in 1994 to 0.562 lbs/person in 1998 — a reduction of 33.3 percent. Vendors also are part of the solution, serving food almost exclusively in compostable paper goods (not plastic coated) and purchasing ingredients in recyclable or compostable bulk packaging. The majority of the vendors also clean, sort and collect their compostables separate from recyclables and non-recoverables in support of the Zero Garbage Project.

— Scott Wilkerson and B.J. Jones, Compost Connections, Inc.

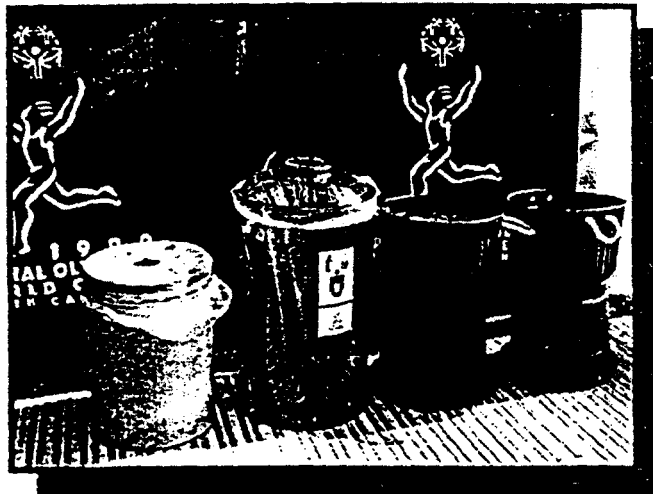
In addition, the Eno River Association received grant funding from the North Carolina Department of Environment and Natural Resources, Division of Pollution Prevention and Environmental Assistance, for its proposal to further develop and document its diversion program. The grant project will enable the festival to enhance its program and become a model for special event recycling in other communities. With additional input from the Triangle J Council of Governments, a practical guidance document will be produced to assist others in planning and implementing recycling and composting programs at special events. ■

Cindy Salter is a recycling and organics management specialist in Durham, North Carolina and has been involved in the waste diversion program for the Festival for the Eno since 1996. For more information, she can be reached at 919-667-0191; salterdog@aol.com.

Special events: The role of recycling and composting

by Sandi Childs and Craig Coker

Lessons learned from the 1999 Special Olympics World Summer Games will aid other large-event recovery operations.



The 1999 Special Olympics World Summer Games were held in the Raleigh-Durham-Chapel Hill area of North Carolina from June 26 through July 4. This international event drew 7,000 athletes and 3,000 coaches from 150 countries to compete in 19 different sports. In addition, over 35,000 local area volunteers were recruited to help put the Games together and to provide a comprehensive support program for athletes, coaches and families.

Logistical planning for this event began several years ago. In mid-1998, representatives of the Special Olympics Games Organizing Committee met with local solid waste and recycling professionals to discuss logistics of solid waste management at the Games. Over the course of the following year, three committees of professionals were assembled, one each for solid waste disposal, for recycling and for food discards composting. The GOC was interested particularly in recycling and composting, as it wanted to leave a legacy of trying to minimize adverse environmental impacts of this event on local solid waste management systems.

As a result of cooperative efforts among the North Carolina Division of Pollution Prevention and Environmental Assistance, North Carolina State University, University of North Carolina at Chapel Hill, the National Association for PET Container Resources (NAPCOR; Charlotte, North Carolina), and several local government solid waste and recycling professionals, operations plans were prepared. Recycling plans focused on plastic beverage bottles, aluminum cans, white office

paper and old corrugated containers (OCC). Composting efforts were developed to divert food discards from Special Olympics dining halls. Financial support for the program was obtained from DPPEA.

Recycling containers

The numbers and types of collection containers needed and where they would be placed were determined by analyzing the numbers of donated Coca-Cola products to be consumed at each venue. Soft drinks were supplied in aluminum cans, while Powerade and water came in 20-ounce PET bottles.

The recycling committee estimated that a total of 618 containers would be needed, including some extras for a safety factor. Most of these were for bottles and cans, with 65 containers earmarked for white paper.

A total of 325 PETE's Big Bins were donated by Coca-Cola Consolidated of Charlotte, Coca-Cola USA (Atlanta) and NAPCOR. These collection bins hold about eight cases of uncrushed PET single-serve bottles and were developed by NAPCOR. For aluminum cans and white paper, a local pharmaceutical company, Ajinomoto, donated 300 fiberboard barrels of approximately 30-gallon capacity each. DPPEA purchased 5,000 liner bags for the containers. Holes four inches in diameter were

drilled in the top of the barrels for cans. Containers for white paper were not lined, and no lid was used.

After the Games, the fiberboard barrels were recycled along with OCC. The PETE's Bins were donated to local schools, nonprofit groups and businesses, and some went to the City of Asheville for reuse.

Instruction and promotion

Instructional stickers for the containers were graphics-based, because of the dual issues of the athletes' handicaps and language barriers encountered in any worldwide event. Two stickers were applied to each bin. One sticker featured the Special Olympics World Games logo with the gold recycling arrows in the background. The other featured a picture of an aluminum can, a PET bottle, or a piece of white paper with an arrow and a depiction of the recycling receptacle. Resources did not allow the use of pole signs or other ways of identifying recycling containers.

Management of materials

Volunteers were used for monitoring of contamination and participation at the venues, recyclables collection, and general oversight and trouble-shooting of recycling.

Recovered recyclables were handled dif-

Sandi Childs is the Eastern Regional Director, National Association of PET Container Resources (Charlotte, North Carolina). Craig Coker is the Organics Recycling Coordinator, North Carolina Department of Environment and Natural Resources, Division of Pollution Prevention and Environmental Assistance (Raleigh).

ferently in each region. At both NCSU and UNC-CH, the Games' recycling effort was integrated into the university's established recycling program, and the same labor force handled aggregated materials. In Durham, a small, local recycling company picked up the aggregated materials at some venues. Other Durham venues plus the city of Raleigh venues relied on dumpsters for aggregation of collected materials. The plan was for full bags of recyclables to be deposited into the dumpsters, usually one each for aluminum and plastics but sometimes a compartmentalized unit. A hauler would tote full dumpsters to a local processor.



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Reality of the games

Heat wave. Just as the Games began, a record-setting heat wave hit the Triangle area. This had an immediate effect on the Games' logistics, causing a huge demand for cold beverages and ice. Although record numbers of beverages were consumed, the system for recycling the containers was underutilized.

Participation. Some venues suffered from low participation, while others reported excellent results. The phenomenon defies explanation, since some of the hottest venues, such as soccer fields, where beverages were consumed in record numbers, hardly took part in recycling, while some indoor venues, such as basketball and swimming, achieved high recycling levels. It might have been a cultural function, or directly related to the knowledge and dedication of the volunteers. It might have been a function of whether the venue had a recycling program going into the Games. Soccer was held in a remote location outside of Raleigh, with no institutionalized recycling program at the fields, while swimming and basketball were held on the campus of UNC-CH, with an excellent ongoing recycling program. Paper recycling was marginal at all venues.

Contamination. In areas where the containers were placed correctly, contamination was limited enough that an onsite monitor could have corrected it with minimal effort. On some days, volunteers were available for this task. Correct placement meant that bottle and can recycling bins were paired and placed next to trash cans. Unfortunately, some volunteers placed recycling containers in unusual places, away from trash cans, and not always paired with other containers. Recycling containers also were placed in the spectator areas at some venues, despite instructions in the operations plan.

Final disposal of materials. Materials collected by the universities and the small recycling business in Durham were handled through local materials processors. Materials collected in dumpsters by waste haulers met an uncertain fate.

The waste haulers serviced the venues without institutionalized recycling programs. Recycling with dumpsters did not work well. Since the local curbside materials processor lacked a sorting conveyor, only de-bagged, source-separated aluminum and plastic containers were acceptable. Bagged material processing was restricted to early morning deliveries, with volunteers armed with de-bagging equipment. But when volunteers waited during arranged hours, the dumpsters never showed up.

Volunteers also mistook recycling dumpsters for trash receptacles, despite the recycling stickers affixed to them. Fortunately, for most cases in which this occurred volunteers were able to pick the bags of recyclables from among the trash and take them to an impromptu sort-



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Table 1 Preliminary material recovery volumes (1)

Commodity	Volume recovered (pounds)
Aluminum cans	3,529
PET bottles	6,631
Corrugated containers	41,560
White paper	2,673
Glass bottles	350

(1) As of press time, tonnages were not available yet from waste haulers for five 8-cubic-yard containers of OCC, one 8-yard container of white paper, two 30-yard dumpsters of PET, one 30-yard dumpster of aluminum cans, three 20-yard dumpsters of mixed PET and cans, and three 30-yard dumpsters of mixed PET and cans.

Source: Recycling Subcommittee of the Special Olympics Games Organizing Committee, 1999.

ing center established at NCSU.

NCSU's sorting center was not planned. It was set up as a remedy to the dumpster problems and because volunteers mistakenly were taking bagged recyclables to the NCSU logistics compound. It turned out to be an excellent way to handle materials. Six Gaylord boxes were set up on pallets, and volunteers sorted recyclables into them, separating bottles and cans. The Gaylords were not confused with trash receptacles, and these clean materials were taken by forklift to the nearby NCSU recycling center. It was an easy system to set up, as the Gaylords and pallets were free. As a potential model for special events, this system bypasses dumpsters, and full Gaylords of bottles and cans could be transported by box truck if a recycling facility were not close by. Gaylords even could be emptied by hand with two people, as the materials are very light.

Food discards composting

During the Summer Games, Olympians were housed at three area universities (NCSU, UNC-CH and Meredith College in Raleigh). Athletes, coaches, staff and volunteers used the universities' dining halls for their meals. Meals were served from 5:00 a.m. to midnight for 11 days. The number of meals served daily was much greater than the normal school-year number of meals served. The Special Olympics established menus in advance, and food service was all-you-could-eat buffet style with disposable paper, cups and cutlery.

To accomplish food discards diversion, a pool of 62 volunteers was assembled. Volunteers were drawn from state government, local recycling associations and high school environmental clubs. These volunteers were separate from the main pool of 35,000 Special Olympics volunteers. Volunteers were organized into three-hour shifts — a lunch shift and a dinner shift. Breakfast and late dinners were not included in the project due to logistical constraints with the dining halls

Tips from other events

With the volume of waste generated at special events, more and more organizing committees are incorporating recycling and composting into waste management plans. The organizing committee for the upcoming 2000 Olympics in Sydney, Australia has developed an extensive recycling and composting plan that requires the use of recycled-content products and recyclable or compostable packaging.

Past Super Bowls have implemented very successful and highly visible waste reduction and recycling programs, recycling as much as half of the event's waste generated.

This year, as a first in golfing history, the U.S. Senior Open implemented recycling that resulted in recovery of one ton of plastic water bottles throughout the four-day event. An estimated 40,000 bottles, or 90 percent of the water bottles disposed in the bleacher areas, were recovered. Composting was included in the initial plan, but was eliminated during the event.

Recommendations from organizers of the

event include:

- Use fewer words and pictures on signs to avoid confusion. Putting only "Water Bottles" on recyclable signs, and "Trash" for all other items would make signs simpler and easier for spectators to understand. It also is important to make sure that if pictures are used, they are used sparingly and match what the words say.
- Use a distinct color for recycling signs to catch spectators' attention and help educate them about proper recycling.
- Place collection containers for recyclables in addition to trash in concession areas, corporate tents and the merchandising tent.
- At least six months before the event, initiate a meeting with the concessionaire to discuss waste reduction opportunities and the purchase of recycled-content and recyclable materials (e.g., HDPE cups).
- Ensure that staff is available to assist with collection of materials from concession areas.

and a lack of volunteers.

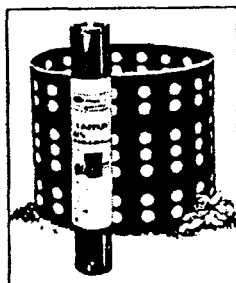
Food discards were collected in 40-gallon, wheeled containers (lined with 45-gallon, 100 percent recycled, black plastic bags). These containers were labeled with the Special Olympics recycling logo and a food waste-to-compost graphic illustration. Disposable products used by the dining halls contained both poly-coated and non-coated plates and bowls; cutlery was plastic. Some small paper plates were included in compostables; but most were not taken due to wax/poly coatings. Larger dinner plates were taken at first,

but not later due to their effect on compost mix C:N ratios, their effect on mix moisture content, and the potential to blow around onsite. Compostables also included paper napkins.

Filled containers were transported to two compost sites (one at NCSU operated by DPPEA and NCSU staff, and one near UNC-CH operated by The Removable Feast under contract to DPPEA) in 15-foot box trucks rented by Special Olympics. For the NCSU compost site, the truck was weighed after each meal using portable truck scales borrowed from the



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North Carolina Division of Motor Vehicles. For the UNC compost site, portable scales weighed containers individually. The amount of food discards transported to the NCSU site totaled 13,885 pounds; the amount diverted to the UNC compost site was 7,734 pounds, for a total diversion of 21,619 pounds (10.8 tons).

The compost mix at the NCSU site consisted of food discards; partially composted leaf mulch from leaves collected on campus in 1997; and ground, screened scrap wood from campus landscaping (screened to a one-inch-minus mesh size). The bulking agent (leaf mulch and scrap wood) was added to the food waste at approximately a 5:1 volumetric ratio. At the UNC compost site, food waste was mixed with ground yard debris at a 2.5:1 volumetric ratio.

Both food composting sites report compost pile temperatures in the range of 140 to 150 degrees Fahrenheit consistently since the end of the Games. It is expected that composting and curing will take about

four months. Planned uses for the finished food compost are focused on commemorative landscape plantings to honor the 1999 Special Olympics World Summer Games at NCSU's J.C. Raulston Arboretum and at UNC-CH's Botanical Gardens.

Lessons learned

Although their ultimate success when measured in amounts of materials diverted is questionable, recycling and composting services for the Special Olympics served as a valuable learning tool for future events of this scale. For the first time, valuable information on methods for diverting recyclable and compostable materials at large events will be passed on to future organizers so they can continue to learn from this group's successes and failures. With continued efforts such as this, waste diversion will become more the standard rather than the exception.

The year-long planning process ensured that many logistical challenges to recycling and composting were addressed, but implementation of the program quickly highlighted shortcomings. Some of the lessons learned include:

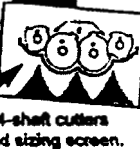
- Make sure that the local organizing committee is big enough to handle all the planning and the tasks. The organizing committee needs people with expertise in marketing, advertising and education as well as recycling.
- Make sure that sufficient volunteers will be available for recycling and composting. Integrate volunteer needs with the overall Games volunteer program to ensure coverage during all times when meals are served. Organizers need to know well in advance if inadequate numbers of recycling volunteers are available through normal volunteer channels.
- Integrate recycling training into the sanctioned job-specific training for all individual volunteers whose job will take them into contact with recycling. Obviously, this training would be more robust for those directly handling recyclables.
- Arrange media exposure for the recycling effort early on. While it is important to avoid too much hype and unrealistic expectations, it's also equally important that individuals who work hard and companies that donate resources get the credit they deserve.
- Do not use dumpsters for aggregation of recyclables unless no alternative exists. Consider instead a system of small, simple sorting centers. Rely on small Gators or golf carts to deliver bagged material for sorting into Gaylords on pallets. Centers can be set up under portable tents. Use volunteers to sort, and box trucks to move materials to market. Vehicles, tents and volunteers all are common to logistical efforts for large events. With proper planning, these resources should easily be directed toward recycling.
- Inform Olympic athletes, coaches and delegation managers about composting and recycling several months before Games begin, so they'll be familiar with the planned recycling and composting activities when they arrive.

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